Operator's Manual

McCORMICK®
FARMALL CUB®
and
INTERNATIONAL CUB®
LO-BOY®
Tractors

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Ave. Chicago 1, Illinois, U.S.A.

TO THE OWNER

The purpose of this manual is to assist you in realizing the benefits you anticipated when you purchased this International Harvester product. Literally thousands of people have contributed to the design and production of this product and its delivery to you. They have an interest in its successful performance and have provided this manual to give you the benefit of the experience they have gained through years of field testing and normal usage of this and similar products.

The way you operate and the care you give this product will have much to do with its successful performance. This manual has been carefully prepared and the information arranged and illustrated to make it as easy as possible for you to find the information you wish. It will pay you to read the entire manual carefully before operating and keep it handy for future reference. Your International Harvester Dealer will be glad to answer any further questions you may have on the operation or care of this product.

It is the policy of International Harvester Company to improve its products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to make such changes on products sold previously.

All illustrations and descriptive matter in this publication apply to International Harvester products sold under the International, McCormick, McCormick-International, McCormick-Deering, or McCormick-Deering International trade name.

As a member of the National Safety Council, we are privileged to use the Green Cross for Safety to designate not only our interest in Safety, but to point out more clearly the safety precautions in this manual.

Parts Depots are strategically located at 12 points and Transfer Houses at 8 points in the United States. Ample stocks are maintained at all times to assure prompt shipment to your IH dealer to meet your requirements.

Parts Depots in the United States

Albany 4, N. Y.
Atlanta, Ga. (East Point, Ga.)
Baltimore 3, Md.
Broadview, Ill.
Columbus 4, Ohio
Dallas 2, Tex.
Denver 17, Colo.
Kansas City 15, Kans.
Memphis 6, Tenn.
Portland 8, Oreg.
Richmond 4, Calif.
St. Paul 4, Minn.

Transfer Houses in the United States

Broadview, Ill.
Council Bluffs, Iowa
Kansas City 15, Kans.
Linden, N. J.
Memphis 6, Tenn.
Moline, Ill.
St. Paul 14, Minn.
Topeka, Kans.

District Offices in Canada

Calgary, Alta.
Edmonton, Alta.
Hamilton, Ont.
London, Ont.
Montreal 14, Que.
Ottawa 1, Ont.
Quebec 8, Que.
Regina, Sask.
Saint John, N. B.
Saskatoon, Sask.
Vancouver 4, B. C.
Winnipeg 10, Man.
Yorkton, Sask.

1-15-59

International Harvester Sales and Service is maintained in all principal countries of the world.

Export address: International Harvester Export Company, Chicago 1, Illinois, U. S. A.

Canadian address: International Harvester Company of Canada, Ltd., Hamilton, Ont., Canada

DELIVERY REPORT

DEALER'S COPY

(This copy to be filed by dealer.)

SERVICE

☐ Farmall Cub Tractor ☐ International Cub Lo-Boy Tractor

Tractor Serial No._____ (See Illust. 3A)

Engine Serial No._____ (See Illust. 3B)

Delivered to_____ Purchaser's Name

Address_____ Street and No. or R.F.D. and Box No.

_____ Town

_____ State _____ Date 19____

Tractor being replaced if any:

Make_____ Age_____ (Years) Model_____

Number tractors owned, including new purchase_____

Check the Major Use Only for this tractor and complete information under heading:

☐ AGRICULTURAL

1. Acres or hectares in crops_____

2. Check chief source of farm income: Dairy ☐ Livestock ☐ Corn ☐ Wheat ☐ Truck ☐ Cotton ☐ Orchard ☐ Other ☐

☐ COMMERCIAL

1. Type work_____

2. List below special duty equipment to be used:

Equipment_____ Make_____ Model_____

Equipment_____ Make_____ Model_____

PREDELIVERY SERVICE—Prior to delivery of the above tractor the following checks and tests were made and corrective action taken as necessary:

- ☐ Shortage or Damage in Shipment
- ☐ Extra Equipment and Accessories Checked Against Purchase Order
- ☐ Tire Pressures
- ☐ Engine Oil Level
- ☐ Air Cleaner Oil Level
- ☐ Transmission, Differential, and Final Drive Oil Levels
- ☐ Steering Housing Oil Level
- ☐ Belt Pulley Drive Unit Oil Level*
- ☐ Cooling System Level
- ☐ Water Level and Gravity of Battery Checked When Installed
- ☐ Engine Oil Pressure
- ☐ Cranking Motor
- ☐ Generator Charging
- ☐ Lights
- ☐ Engine Clutch
- ☐ Brakes
- ☐ Torque Cylinder Head —Engine Hot
- ☐ Adjust Valves—Engine Hot
- ☐ Engine Operation
- ☐ Test Antifreeze
- ☐ Gear Shifting—All Speeds
- ☐ Road Test for General Operation
- ☐ Hydraulic System Operation*
- ☐ Clean and Polish

DELIVERY SERVICE—At time of delivery the importance of the Operator's and Maintenance Manuals was explained and, with them as a guide, instruction was given as indicated by check marks:

- ☐ Precautions with New Tractor
- ☐ Lubricating Entire Tractor
- ☐ Fuel and Lubricant Specifications
- ☐ Checking Oil Levels
- ☐ Care of Air Cleaner and Breathers
- ☐ Servicing Oil Filter
- ☐ Starting, Stopping, and General Operation
- ☐ Drawbar Adjustment
- ☐ Safe Hitching Practices
- ☐ Care of Cooling System
- ☐ Care and Use of Hydraulic System*
- ☐ Fast-Hitch Operation*
- ☐ Care of Fuel System
- ☐ Adjustment of Engine Clutch
- ☐ Care of Ignition System*
- ☐ Care of Generator
- ☐ Care of Battery
- ☐ Adjustment of Brakes
- ☐ Tires—Inflation, Weighting, Care
- ☐ Wheel Weights and Tread Adjustment
- ☐ Cold Weather Operation
- ☐ Storing Tractor
- ☐ Starting Tractor After Storage
- ☐ Caution Regarding High-Speed Operation
- ☐ Tightening Nuts and Bolts
- ☐ Keeping Tractor Clean

When So Equipped.

The customer's signature below certifies that the tractor was delivered to him in a satisfactory condition and that he received instruction as to its proper operation and maintenance.

Appointment for after-delivery inspection (10 to 30 days after) was made for_____ Date

Signed_____ Customer

Signed_____ Dealer

By_____

By_____

CUSTOMER'S SERVICE RECORD

After-delivery inspection made ____________________
Date

JOB No.	DATE	BRIEF DESCRIPTION OF SERVICE PERFORMED

RECORD OF CONTACT

Symbols— C - Called on T - Telephone L - Letter

DATE	SYM	REMARKS	DATE	SYM	REMARKS	DATE	SYM	REMARKS

DELIVERY REPORT

(This copy to be sent to International Harvester District Office.)
(EXPORT—Send to Distributor or Affiliate General Office.)

DISTRICT OFFICE COPY
(EXPORT—DISTRIBUTOR OR AFFILIATE OFFICE COPY)

SERVICE

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Engine Serial No._____ (See Illust. 3B)

Delivered to_____ Purchaser's Name

Address_____ Street and No. or R.F.D. and Box No.

_____ Town _____ State _____ Date 19__

Tractor being replaced if any:
Make_____ Age_____ (Years) Model_____

Number tractors owned, including new purchase_____

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☐ **COMMERCIAL**

1. Type work_____
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Equipment_____ Equipment_____
Make_____ Model_____ Make_____ Model_____

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By_____

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DELIVERY REPORT

OWNER'S COPY

(This copy to be retained by owner.)

☐ Farmall Cub Tractor ☐ International Cub Lo-Boy Tractor

Tractor Serial No._____ (See Illust. 3A)

Engine Serial No._____ (See Illust. 3B)

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_____ State

_____ 19___ Date

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Signed_____ Customer

Signed_____ Dealer

By_____

By_____

CONTENTS

A Careful Operator

IS THE BEST INSURANCE

AGAINST AN ACCIDENT

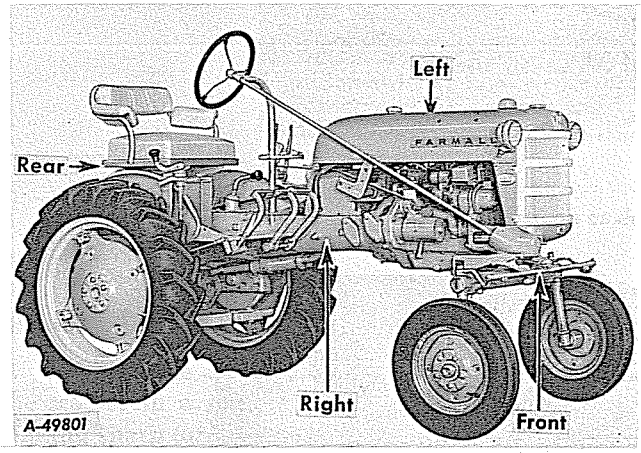
—*National Safety Council.*

INTRODUCTION

Assembled in this book are operating and lubrication instructions for the Farmall Cub and International Cub Lo-Boy Tractors. This material has been prepared in detail in the hope that it will help you to better understand the correct care and efficient operation of your tractor.

If you should need information not given in this manual, or in the tractor Preventive Maintenance Manual, or require the services of a trained mechanic, get in touch with the International Harvester dealer in your locality. Dealers are kept informed on the latest methods of servicing tractors. They carry stocks of IH parts, and are backed in every case by the full facilities of a nearby International Harvester District Office.

Throughout this manual the use of the terms LEFT, RIGHT, FRONT, and REAR must be understood to avoid confusion when following instructions. LEFT and RIGHT indicate the left and right sides of the tractor when facing forward in the driver's seat. Reference to FRONT indicates the radiator end of the tractor; to REAR, the drawbar end. *See Illust. 3.*



Illust. 3

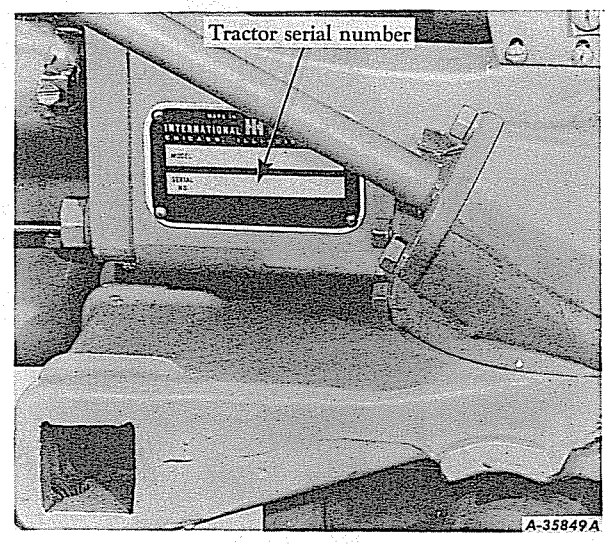
Terms of location.

The illustrations in this manual are numbered to correspond with the pages on which they appear; for example, *Illusts. 3, 3A and 3B are on page 3.*

In order to provide a tractor equipped as nearly as possible to suit each customer's needs, there is available a variety of extra equipment and accessories. *See page 43.*

Where operating or maintaining instruction on these items is required, it is included in the Operator's or Preventive Maintenance Manual. Disregard the instructions for equipment not on your tractor.

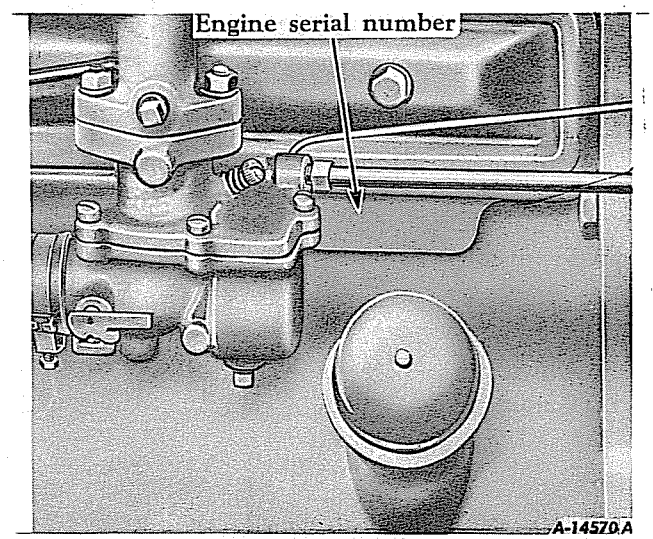
When in need of parts, always specify the tractor and engine serial numbers including prefix and suffix letters. The tractor serial number is stamped on a plate attached to the steering gear housing on the right side of the tractor. *See Illust. 3A.*



Illust. 3A

Location of tractor serial number.

The engine serial number is stamped on the left side of the engine crankcase to the right of the carburetor. This serial number is preceded by the letters FCUBM. *See Illust. 3B.*

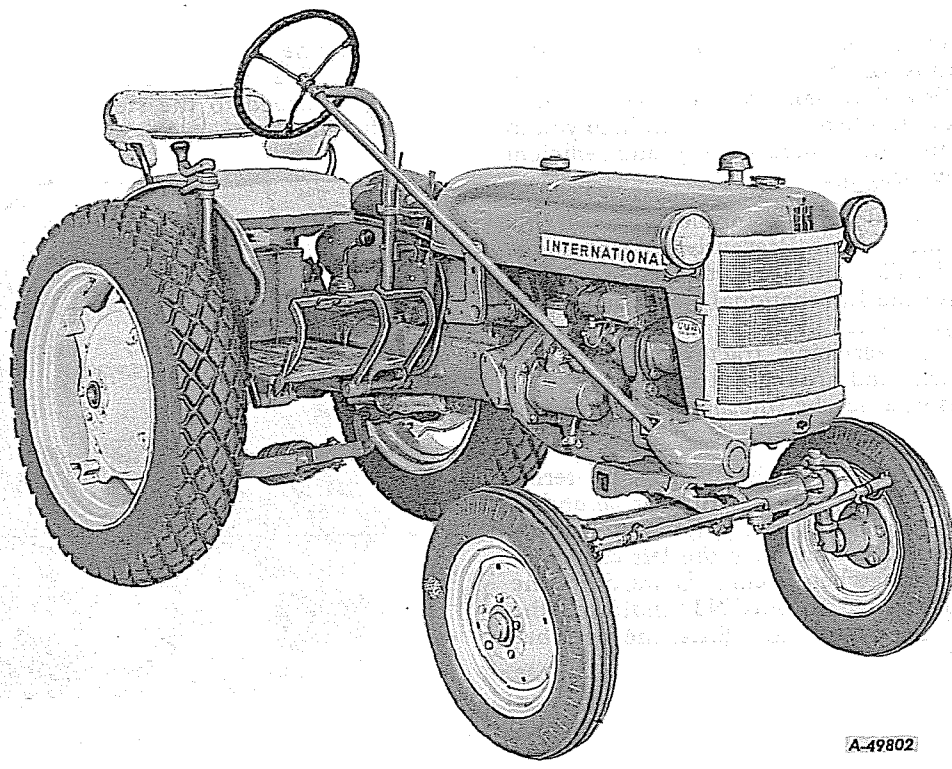


Illust. 3B

Location of engine serial number.

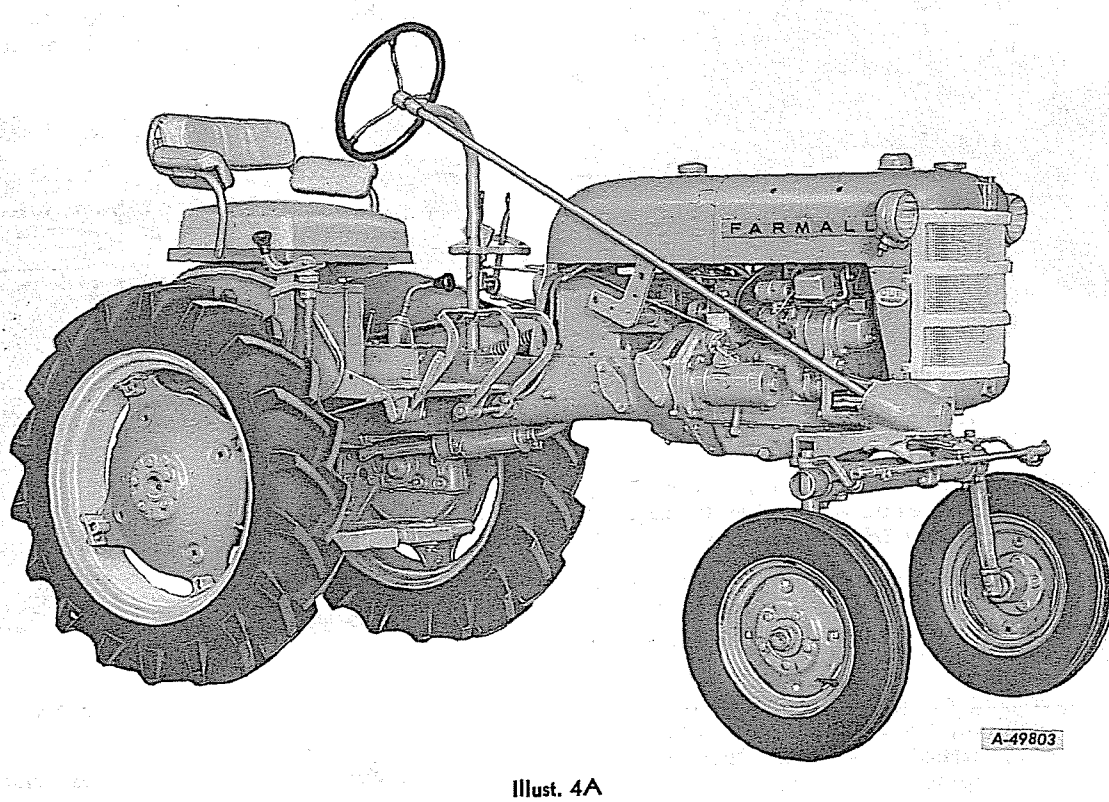
For ready reference, we suggest that you write these serial numbers in the spaces provided on the Delivery Report.

DESCRIPTION



Illust. 4

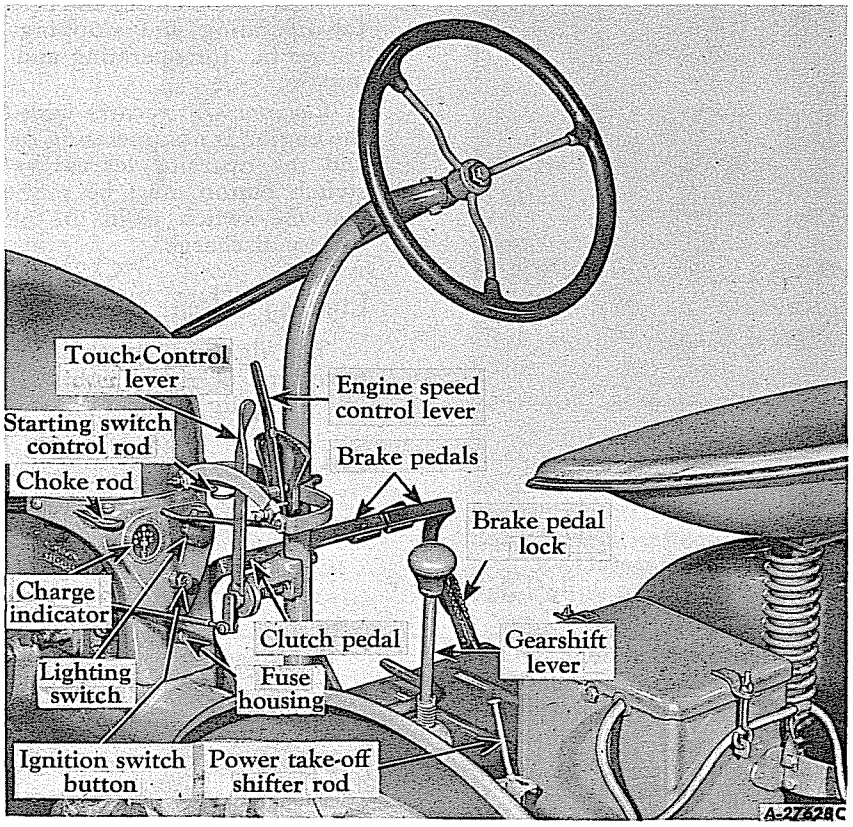
Right front view of International Cub Lo-Boy Tractor.



Illust. 4A

Right front view of Farmall Cub Tractor.

INSTRUMENTS AND CONTROLS



Illust. 5

Controls on the Farmall Cub Tractor.

Brake Pedals

These pedals are used to stop the tractor, to hold the tractor in a stationary position, or to assist in making sharp turns as outlined below:

To stop the tractor, latch the pedals together so both brakes will operate simultaneously when the pedals are pressed down.

To hold the tractor in a stationary position, latch the pedals together, depress and lock them in this depressed position by using the brake pedal lock.

To assist in making a sharp turn, the pedals must be operated individually, depressing the pedal on the side toward which the turn is to be made.

The brake pedal latch (behind the left brake pedal) is used to latch both brake pedals together, causing the brakes to operate simultaneously.

Caution! Always latch the brake pedals together when driving the tractor in high gear. To latch the pedals together, engage the latch (located in back of the left pedal) (*Illust. 13*) in the slot in back of the right pedal. When the brake pedals are not latched together, the latch should rest in the slot in back of the left brake pedal.

The brake pedal lock (*Illusts. 5 and 13*) is used to lock the brake pedals in the depressed position. This prevents the tractor from moving.

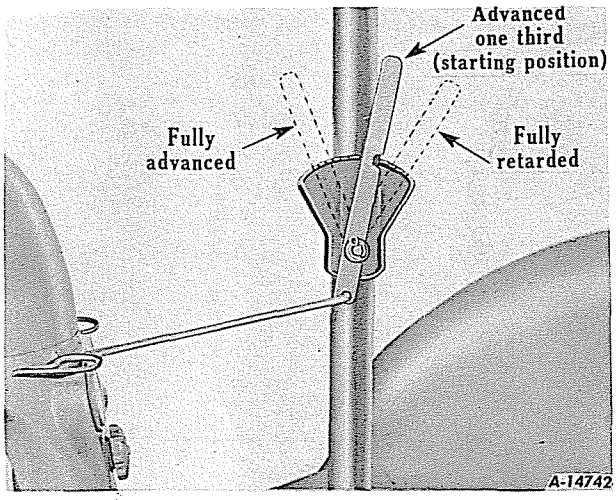
Clutch Pedal

This pedal, when depressed all the way, disengages the engine from the transmission.

Starting Switch Control Rod

To start the engine, adjust the choke rod and pull out on the starting switch control rod as explained *on pages 9 and 10.*

Engine Speed Control Lever



Illust. 6

Various positions of the engine speed control lever.

This lever controls the speed of the engine and, when set in a given position, will maintain a uniform engine speed even though the engine load may vary.

Do not permit the engine to run below the minimum idle speed for any length of time, or operate the engine at more than the regular, governed speed. Excessive speed is harmful. Refer to the "Specifications" *on page 44.*

Governor

The governor is set at the factory and should require no adjustment. Consult your International Harvester dealer if the governor does not function properly.

Choke Rod

The choke rod makes possible the regulation of the carburetor choke from the driver's seat. Pulling out on the choke rod closes the carburetor choke for starting the engine; pushing it back in opens the choke.

Carburetor Choke Lever

The carburetor choke lever controls the air supply to the carburetor. When the choke lever (*Illusts. 9 and 9A*) is moved up all the way (closed position) the air supply is cut off, thereby enriching the fuel mixture for starting the engine. If your tractor is not equipped with a cranking motor and choke rod, move the choke lever up all the way before cranking the engine. Moving the choke lever back down opens the choke for normal engine operation.

Ignition Switch Button

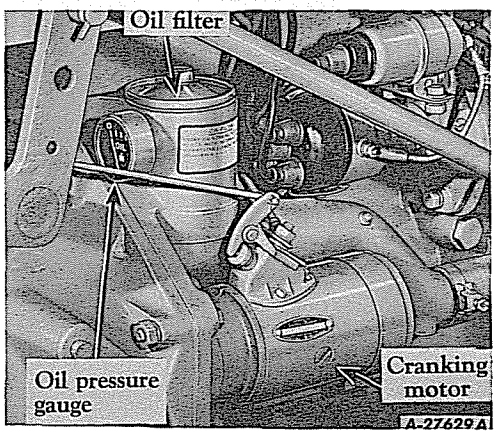
This button closes and opens the electrical circuit for operating and stopping the engine. Pull the button out for operating and push it in to stop the engine.

Caution: On tractors with battery ignition, when the engine is not operating or the engine has stalled and the operator leaves the tractor, the ignition switch button must be pushed all the way in, so that the switch is in the **off** position, to prevent battery discharge.

Lighting Switch

The lighting switch has four positions: "OFF" position, "D"—dim lights, "B"—bright lights, and "R"—rear light.

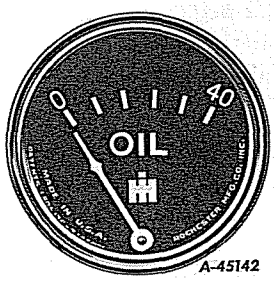
Oil Pressure Gauge



Illust. 6A

Location of oil pressure gauge.

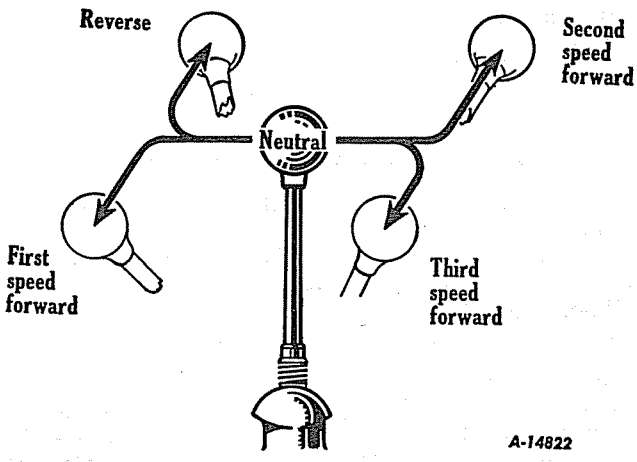
This gauge (*Illusts. 6A and 6B*) indicates whether lubricating oil is circulating through the engine. The indicator needle should be past the first mark above 0 when the engine is running at speeds approximately 100 r.p.m. above slow idle speed. If the needle does not move past the first mark above 0, stop the engine immediately and investigate the cause of the oil pressure failure. If you are unable to find the cause, consult your International Harvester dealer before operating the engine.



Illust. 6B

Oil pressure gauge.

Gearshift Lever

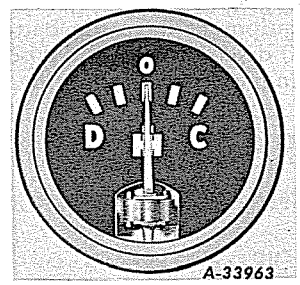


Illust. 7

Gear shifting positions.

This lever is used to select various gear ratios provided in the transmission. There are three forward speeds and one reverse speed. *See Illust. 7.* Refer to "Specifications" *on page 44.*

Charge Indicator



Illust. 7A

Charge indicator.

This instrument indicates whether the generator is charging or the battery is discharging. If it shows discharge continuously, investigate the cause to avoid completely discharging the battery and possible damage to the generator. Refer to the tractor Preventive Maintenance Manual for additional information on electrical equipment.

Belt Pulley and Power Take-Off Shifter Rod

The shifter rod is used to engage or disengage the belt pulley or the power take-off. *Refer to pages 19 and 20* for operating instructions.

BEFORE STARTING YOUR NEW TRACTOR

Lubrication

Tractors shipped to destinations in the United States of America, Canada and Mexico have the crankcase and air cleaners filled with SAE-10W oil. If the engine is to be operated at temperatures between +65° F. and +10° F., this oil can be used for the first 50 hours of operation. If temperatures are not within this range, drain the oil from the crankcase, oil filter, and air cleaner, and replace it with the required amount of fresh oil having the physical properties and proper viscosity suitable for the prevailing temperature and type of service. After the first 50 hours, the oil filter element and crankcase oil should be replaced. Refer to the "Lubrication Guide".

Lubricate the entire tractor, using the "Lubrication Guide."

Check the oil levels of the engine crankcase, air cleaner, transmission, belt pulley housing and all gear cases to see that they are filled to the correct levels with oil of the proper viscosity for the prevailing temperature. Refer to "Lubrication Guide" and the "Lubricating Oil and Grease Specifications" *on pages 36 and 37.*

Tractors packed for export have all oil drained from the engine crankcase, air cleaner and all gear cases.

Pneumatic Tires

Before moving the tractor, check the air pressure in the pneumatic tires and inflate or deflate the front tires to twenty pounds and the rear tires to twelve pounds. Refer to the table *on page 25* for more complete information.

Engine Cooling System

Be sure the drain plug underneath the radiator is closed. *See Illust. 34.*

Fill the radiator to a level slightly below the bottom of the filler neck. Filling the radiator to this level will allow for expansion of the coolant under normal operating conditions. Use clean water; soft or rain water is recommended, as it does not contain alkali which forms scale and eventually clogs the passages.

For further information, see "Cooling System" *on pages 33 and 34.* If the tractor is to be operated in freezing temperatures (+32° F. or lower), refer to "Cold Weather Precautions" *on pages 34 and 35.*

Fuel System

International Harvester gasoline burning engines are specifically designed for use with regular grade gasoline having a 90 minimum octane rating—Research Method (approximately 84 Motor Method).

Use a good grade of clean gasoline.

BEFORE STARTING YOUR TRACTOR

Battery-to-Ground Cable

Tractors shipped from the factory with starting and lighting equipment have the battery-to-ground cable (*Illust. 30*) disconnected and taped. Therefore, before attempting to start the engine, be sure that the battery-to-ground cable is connected to the ground.

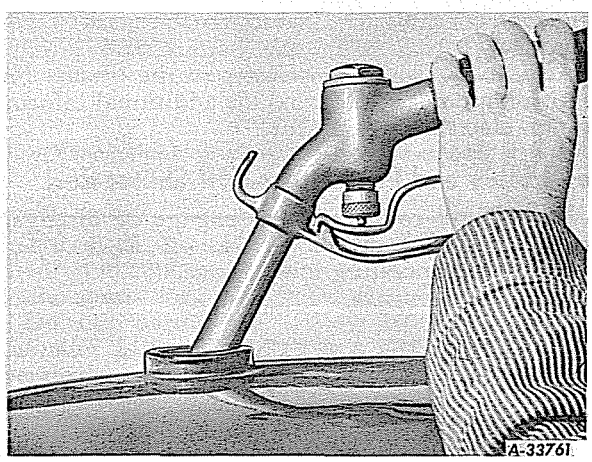
Instruments and Controls

Thoroughly acquaint yourself with all instruments and controls as described *on pages 5 to 7.*

PREPARING YOUR TRACTOR FOR EACH DAY'S WORK

Air cleaner cap.....Remove any dirt or chaff. *See* the tractor Preventive Maintenance Manual.
Air cleaner oil cup.....Remove, clean and refill. *See* the "Lubrication Guide" and the tractor Preventive Maintenance Manual.
Lubrication points.....See "Lubrication Guide." *Pages 38 to 42.*
Cooling system.....Check the level of the coolant in the radiator. *See page 33.*

Fuel System

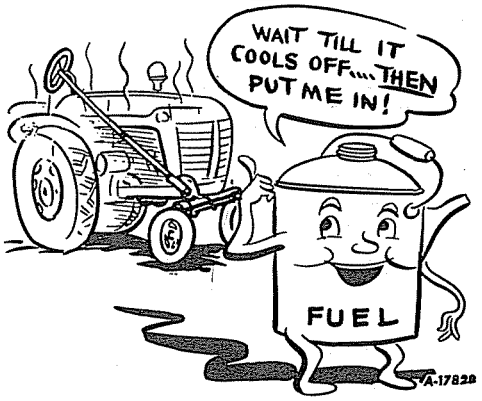


Illust. 8
Filling the fuel tank.

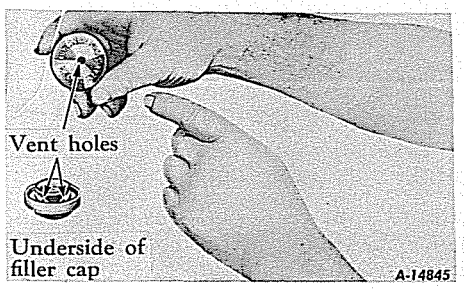
Fill the fuel tank with a good grade of clean gasoline, preferably at the end of each day's run. This will force out any moisture-laden air and prevent condensation in the fuel tank.

Safety first! Never fill the fuel tank when the engine is running or when near an open flame; do not smoke or use an oil lantern when working around inflammable fuels. When pouring fuel, keep the hose nozzle in contact with the metal of the fuel tank (*Illust. 8*) to avoid the possibility of an electric spark igniting the gas. Do not light matches near gasoline, as the air within a radius of several feet is mixed with a highly explosive vapor.

The fuel tank filler cap has air vents. *See Illust. 8A.* Keep these vents open at all times to assure proper flow of the fuel.

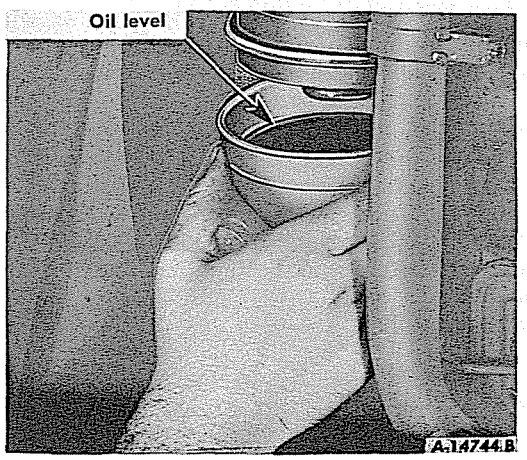


Never refuel the tractor while the engine is running or extremely hot.



Illust. 8A
Vent holes in filler cap.

Air Cleaner



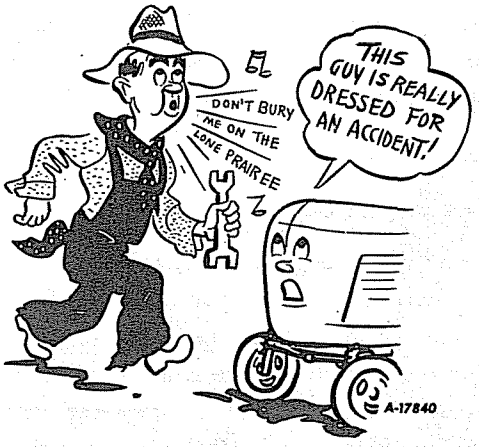
Illust. 8B
Oil level bead in air cleaner oil cup.

The air cleaner cap should be cleaned, and the oil in the air cleaner oil cup should be changed more frequently than every ten hours of operation, if unusually dusty and dirty conditions are encountered.

OPERATING THE ENGINE

Before attempting to start or operate the tractor, be sure you review the instructions for a new tractor and thoroughly familiarize yourself with the instruments and controls.

This engine is designed to operate on gasoline with a 90 minimum octane rating (Research Method).

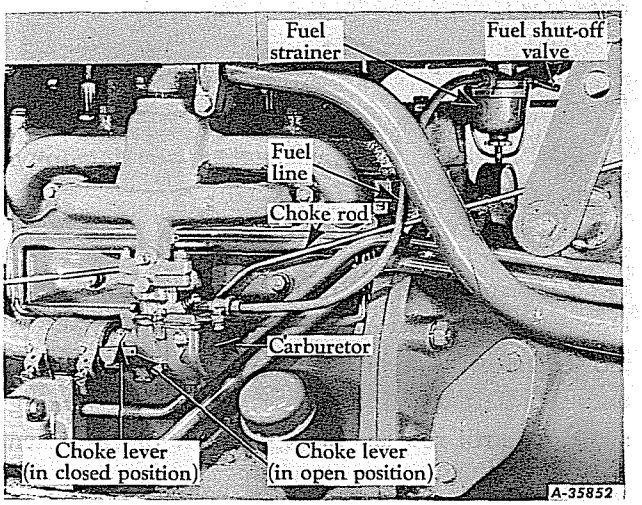


Loose or "floppy" clothing should not be worn by the operator because of the danger of it wrapping on or getting into the moving parts.

Fuel System

Be sure the shut-off valve on the fuel strainer under the gasoline tank is open. To prevent leakage or seepage when the valve is in its full-open position, screw out the needle stem (shut-off valve) until the seat on the stem is tight against the stop.

When starting the engine in a barn or garage, keep the doors wide open because exhaust gases from internal-combustion engines contain poisonous carbon monoxide which is odorless, tasteless and colorless.



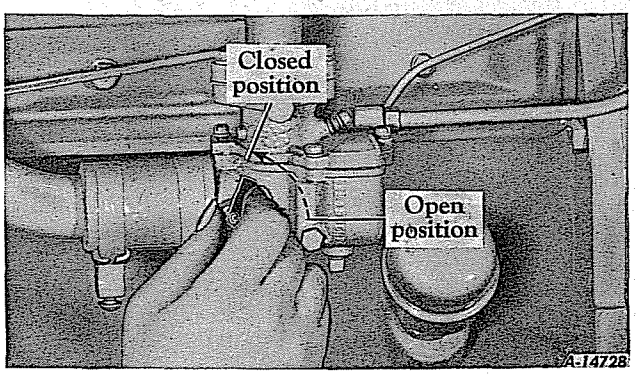
Illust. 9

Fuel system and controls.

Starting the Engine

1. Put the gearshift lever in the neutral position. *See Illust. 7.*
2. Pull the choke rod all the way out. *See Illust. 5.*

Continued on next page.



Illust. 9A

Closing the carburetor choke lever. (Tractors without cranking motor.)

Avoid overchoking, as excessive use of the choke will flood the engine, making it hard to start. The use of the choke for starting will vary, depending on temperature and altitude.

3. Advance the engine speed control lever one third. *See Illust. 6.*

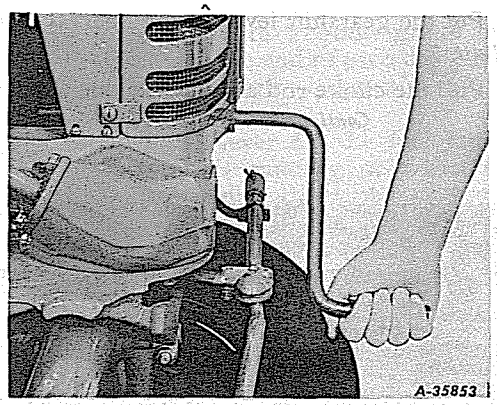
4. Pull out on the ignition switch button. *See Illust. 5.*

5. Disengage the engine clutch by pressing down on the clutch pedal. *See Illust. 11B.*

6. Pull out on the starting switch control rod (*Illust. 5*) and release it as soon as the engine starts. However, do not operate the cranking motor for more than 30 seconds at any one time. If the engine does not start within this time, release the starting switch control rod and wait a minute or two; then try again.

Important! Never operate the cranking motor while the engine is rotating.

7. Slowly release the clutch after the engine starts.



Illust. 10
Correct method of hand-cranking. (Tractors without cranking motor.)

Caution! When hand cranking the engine, be sure that the gearshift lever is in the neutral position, and always stand in a position that will eliminate any possibility of being struck by the starting crank if there is a reversal of the direction of the engine. Crank the engine by using quick up-strokes; do not spin it.

After the Engine Starts

As soon as the engine starts, adjust the choke to a point where the engine operates without missing, and as the engine warms up, open the choke by gradually pushing the choke rod all the way in, or by moving the carburetor choke lever down all the way. *See Illust. 9 and 11B.* Do not use the choke to enrich the fuel mixture, except when starting the engine.

Immediately after the engine starts, check the oil pressure gauge (*Illust. 6B*) to see whether lubricating oil is circulating through the engine. If it is not, stop the engine and inspect the oil system to find the cause of failure. If you are unable to find the cause, be sure to consult your International Harvester dealer before operating the engine.

Stopping the Engine

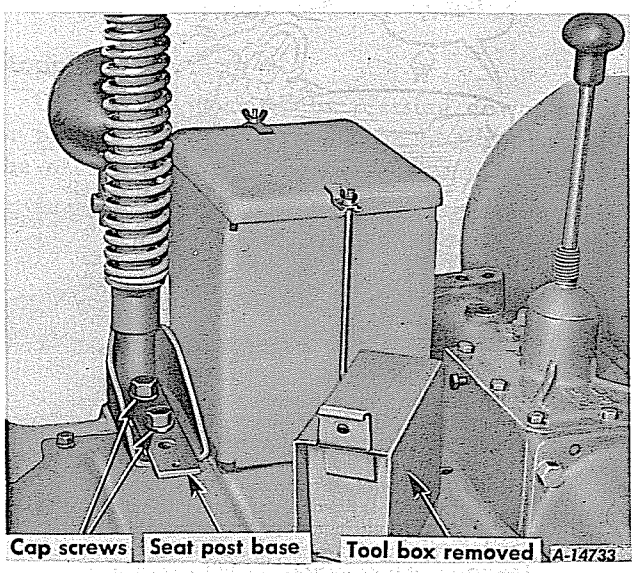
Retard the engine speed control lever by pulling it all the way back (*Illust. 6*). Allow the engine to cool slowly from full-load operation by slowly idling the engine for a short time. Then push the ignition switch control button all the way in to stop the engine. It is advisable to close the gasoline shut-off valve if the engine is to be stopped for any length of time.

DRIVING THE TRACTOR

Adjusting the Seat

Farmall Cub

The tractor seat can be set in either of two positions by removing the tool box and changing the position of the two cap screws in the seat post base (*Illust. 11*), giving a total adjustment of 1½ inches. Tighten the cap screws securely when reassembling and replace the tool box.



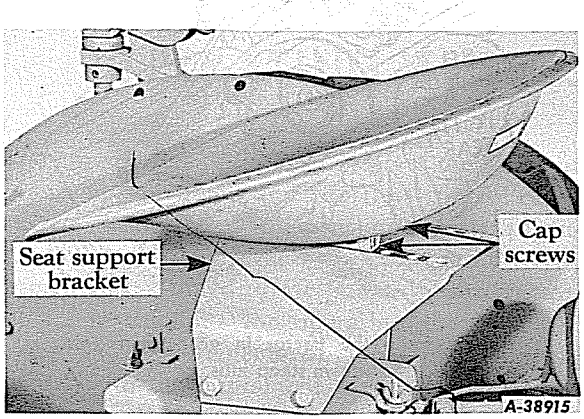
Illust. 11
Seat in the forward position.

Adjusting the Seat

International Cub Lo-Boy

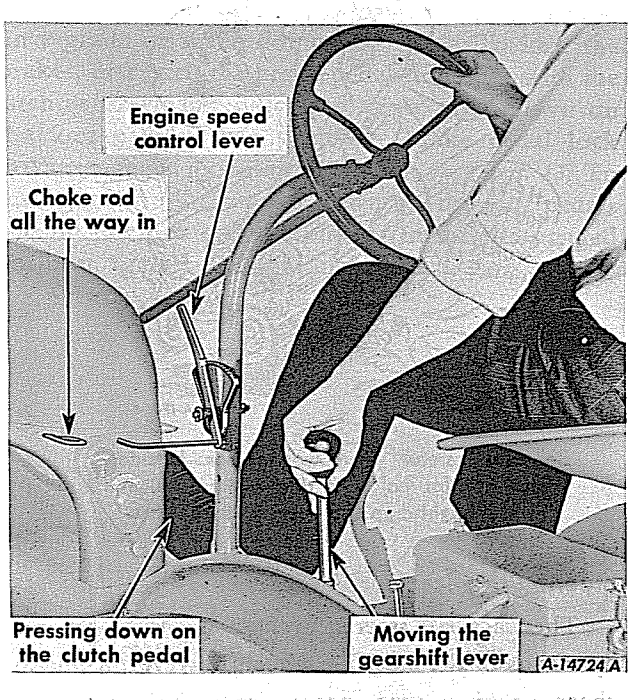
Before starting the tractor, adjust the seat to one of the four positions available to provide the most comfortable position for the operator.

The seat is quickly and easily adjusted by changing the position of the four cap screws in the seat support bracket (*Illust. 11A*) giving a total adjustment of 4⅜ inches. Tighten the cap screws securely when reassembling.



Illust. 11A
Seat in the forward position.

Starting the Tractor



Illust. 11B
Shifting the gears.

1. Advance the engine speed control lever slightly. *See Illust. 6.*

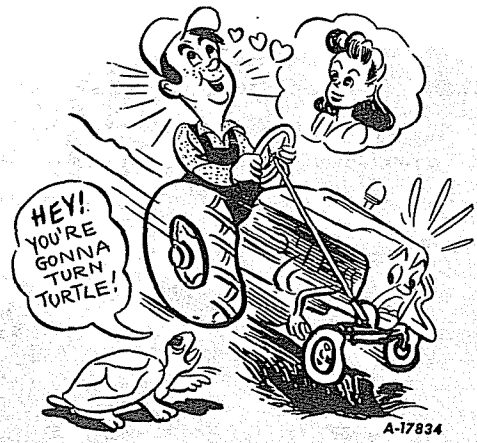
2. Disengage the clutch by pressing the clutch pedal all the way down.

3. Hold the clutch pedal in this position and move the gearshift lever to the desired speed.

4. Start the tractor in motion by slowly releasing the clutch pedal and advancing the engine speed control lever to the position where the engine operates best for the load to be handled. **Note:** Do not shift gears while the engine clutch is engaged or while the tractor is in motion.

5. Do not rest your feet on the clutch or brake pedals while driving the tractor, as this will result in excessive wear on the linings.

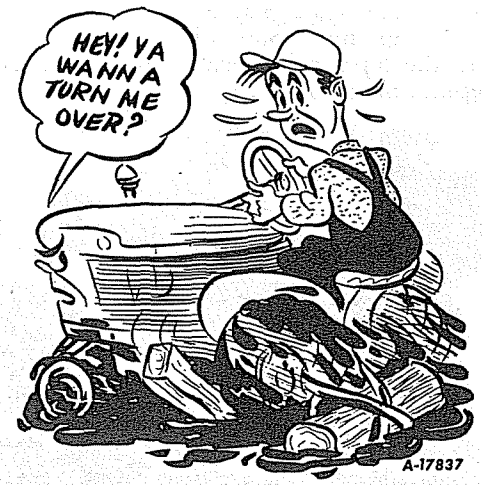
Always latch the brake pedals together before driving the tractor in high gear. To latch the pedals together, engage the latch (located in back of the left brake pedal) in the slot in back of the right pedal. *See Illust. 13.* When the brake pedals are not latched together, latch should rest in the slot in back of the left brake pedal. *See Illust. 13.*



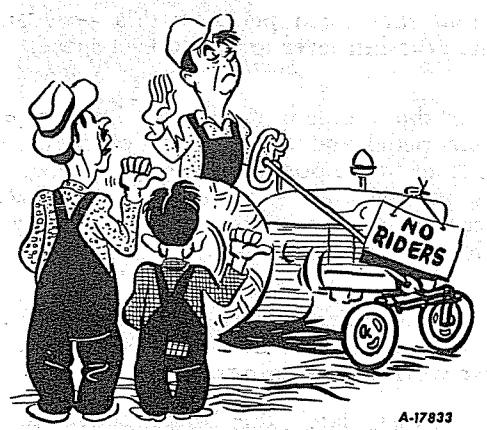
Be extra careful when working on hillsides. Watch out for holes or ditches into which a wheel might drop and overturn the tractor.

Steering the Tractor

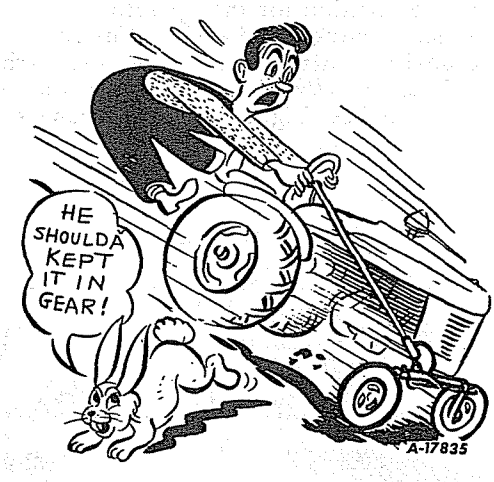
The tractor is steered in the conventional manner by means of the steering wheel; however, to make a sharp or pivot turn, press either the right or left brake pedal, depending on the direction in which the turn is to be made. The brake pedals must be unlatched so they can be operated individually.



If the tractor will not move because the rear wheels have dug in or sunk deeply into the ground, don't fasten logs, posts, or anything to the rear wheels that will prevent them from rotating. This would be certain to tip the tractor over backward. Instead, use another tractor and hitch it with a chain around the front axle and steering gear housing base of the "stuck" tractor. The power of both tractors should be used, and a heavy pull must be kept on the chain at all times.



Only one person, the operator, should be permitted to ride on the tractor when it is in operation.



Always keep the tractor in gear when going down steep hills.

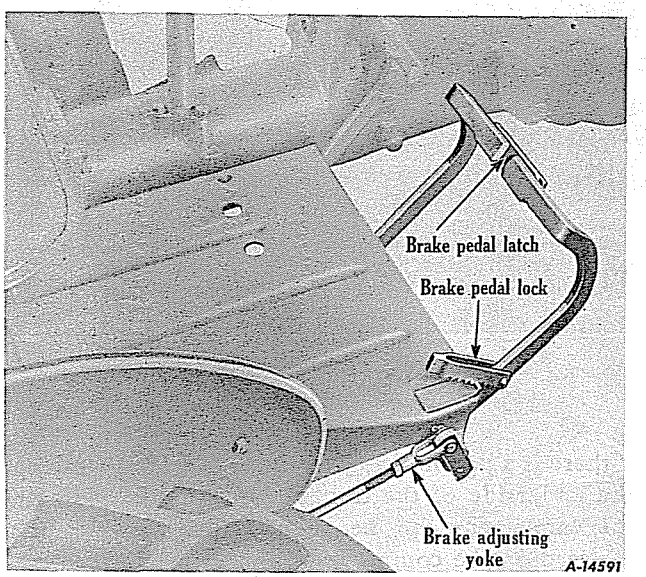
Towing the Tractor

When towing is necessary, use a rope, chain, or cable and have an operator steer the tractor and operate the brakes.

Attach a tow rope, chain, or cable around the front axle and steering gear housing. When towing a tractor, do not exceed a speed of twenty miles per hour.

Stopping the Tractor

Disengage the clutch by pressing down firmly on the clutch pedal, and move the gearshift lever to the neutral position. Use the brakes if necessary.

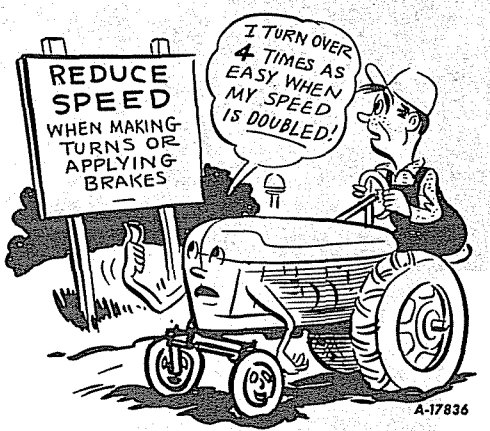


Illust. 13

Brake pedals latched together and lock engaged to hold tractor in a stationary position.

Locking the Brakes

Always lock the brakes when the tractor is parked on a grade or when doing belt work. To lock the brakes, first latch the brake pedals together with the latch as previously described. Now press down on the foot pedals; then place the brake pedal lock in the engaged position as shown *in Illust. 13.* To disengage the lock, press down on the foot pedals and lift the lock out and place it in the disengaged position, against the right brake pedal.



Reduce speed before making a turn or when applying the brakes. Remember, the danger of the tractor overturning increases four times when the speed is doubled.

OPERATING THE TOUCH-CONTROL SYSTEM

The control lever (*Illust. 14A*) gives the operator complete, instantaneous and effortless control of all the direct-connected implement operating adjustments. The use of the lever will depend on the type of implement mounted on or pulled by the tractor. Complete instructions for operating the lever are included in the Owner's or Operator's Manual furnished with the implement. General instructions for operating the lever are given below.

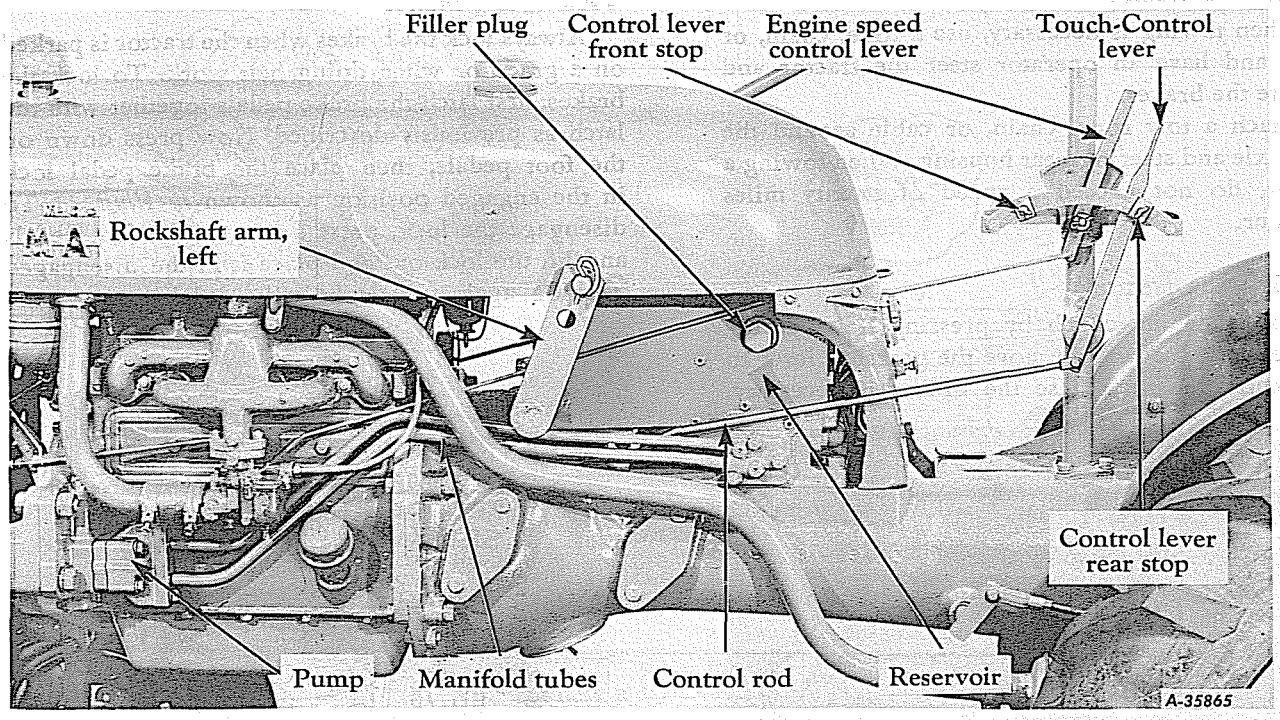
The control lever quadrant is provided with a pair of adjustable Touch-Control lever stops.

The front stop when set in a given position will limit the travel of the control lever and prevent the implement from being raised above the desired height.

The rear stop is used to point out the position where the control lever should be each time the implement is lowered to maintain a uniform working depth.

To lower the implement, move the control lever back until the implement has reached the desired working depth; then move the rear stop to this position and tighten in place.

OPERATING THE TOUCH-CONTROL SYSTEM

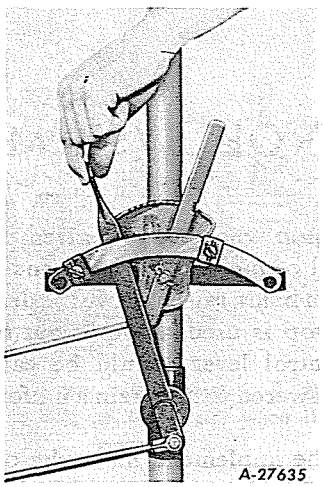


Illust. 14

Touch-Control system.

The working depth will be maintained by moving the lever back to the stop each time the implement is lowered.

After attaching the implement to the tractor, the Touch-Control lever front stop must be properly set if there is a possibility of the implement not clearing the underside of the tractor. Once the stop is set, the implement can be raised quickly by a flick forward on the control lever.



Illust. 14A

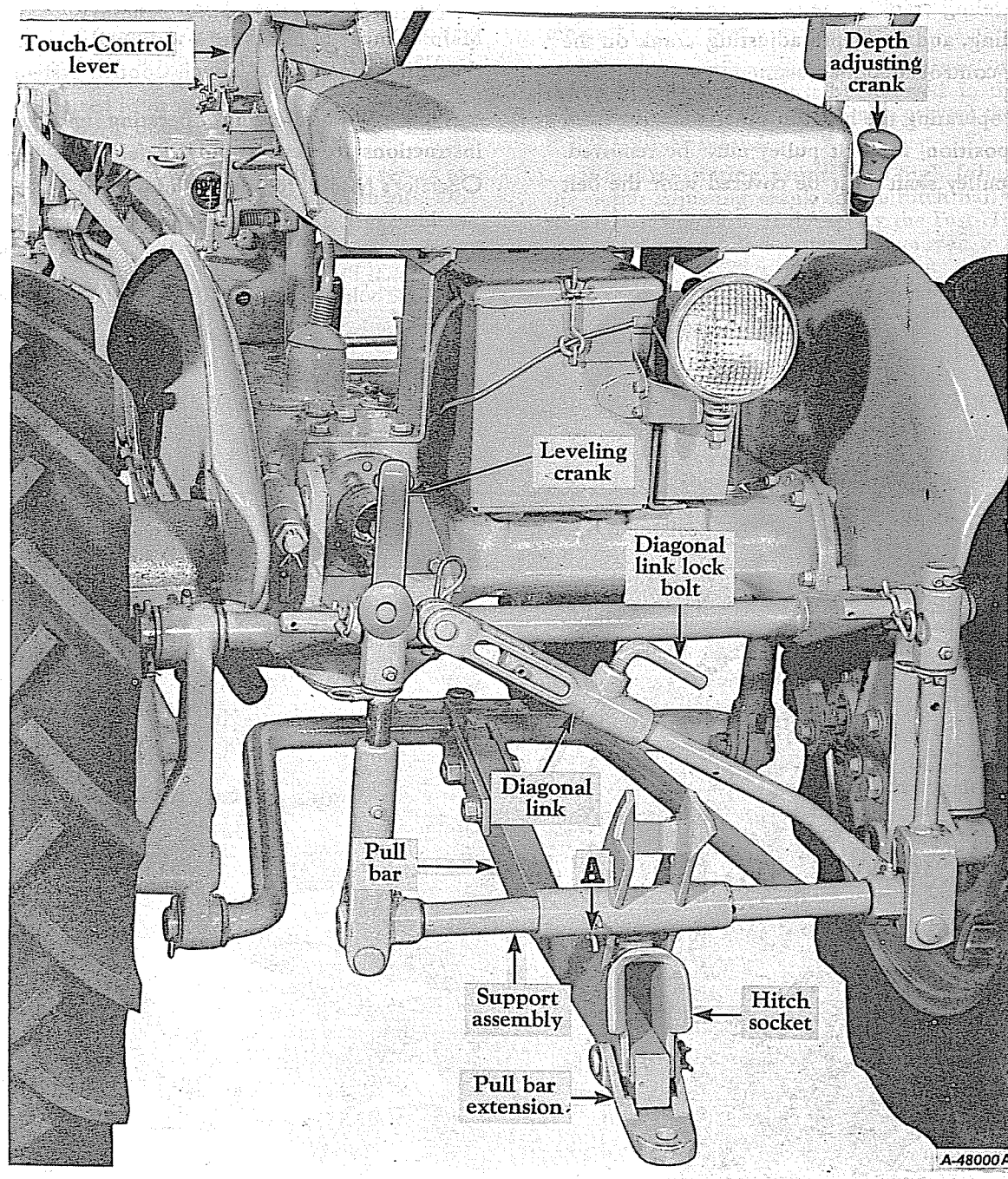
Operating the Touch-Control system.

To set the Touch-Control stop, slowly move the control lever forward to raise the implement and stop it before the implement hits any part of the underside of the tractor. Then move the stop up against the control lever and tighten it in this position. This will prevent the control lever from being moved past the point of the desired lifting height.

Note: If the implement hits the underside of the tractor, in addition to doing possible damage to the tractor or implement, the Touch-Control system will not have completed its cycle and this will cause the pump unit to operate at maximum high pressure and heat the IH Hy-Tran fluid excessively, thereby causing possible internal damage to the pump. This condition can be quickly detected by a noticeable loading of the engine.

If this condition should occur, immediately move the control lever back and set the control lever stop at a point where the raised implement will not hit the underside of the tractor.

OPERATING THE FAST-HITCH



Illust. 15

Rear view of Farmall Cub Tractor with Fast-Hitch.

OPERATING THE FAST-HITCH

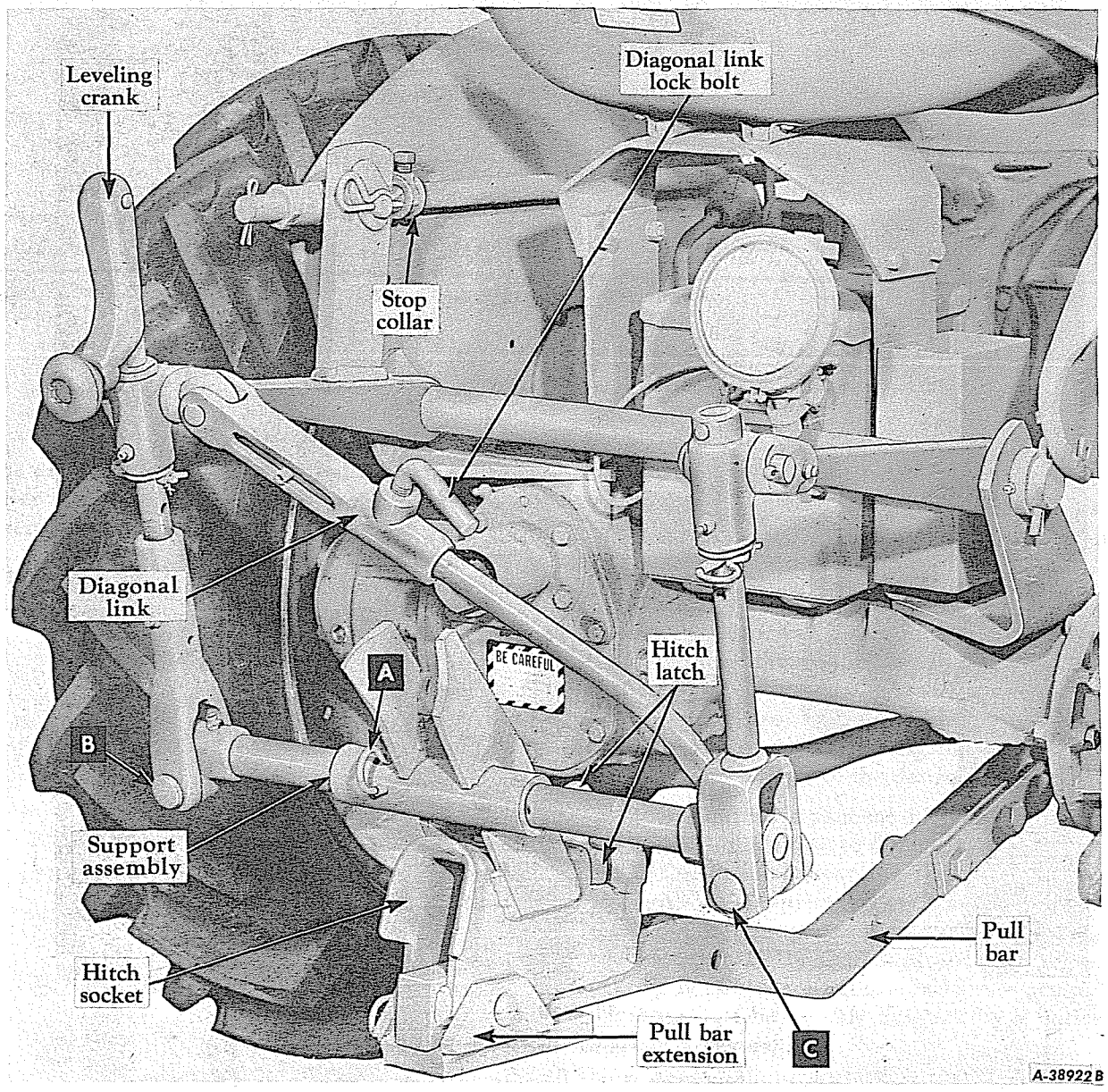
Touch-Control raises and lowers the complete hitch, thus raising the implement to the transport position, or lowering it to the working position.

The leveling crank at the rear of the tractor controls leveling, and the depth adjusting crank on the right side controls depth adjustment.

When operating the hitch in other than the fixed drawbar position, the belt pulley must be removed. The belt pulley shaft must be covered with the belt pulley shaft guard and the power take-off shaft must be covered with the power take-off shaft guard, if not already so protected.

Note: *Refer to page 17* and the tractor Preventive Maintenance Manual for additional information regarding the Farmall Touch-Control system.

Note: The following operating and adjusting instructions are general only. **Refer to the implement Operator's Manual for specific instructions.**



Illust. 16

Rear view of International Cub Lo-Boy Tractor with Fast-Hitch.

OPERATING THE FAST-HITCH

Important! Before operating International Cub Lo-Boy tractors equipped with Fast-Hitch, the front wheels must be equipped with a set of either one-piece or two-piece wheel weights and the front tire tubes filled three-quarters full with a calcium chloride solution. See "Liquid Weights" *on page 26* and "Front Wheel Weights" *on page 28.*

When using the utility carrier with the International Cub Lo-Boy tractor, additional front end weight is required in proportion to the weight of the payload as shown under "Fast-Hitch Load Limitations".

The Farmall Touch-Control hand lever serves to control the raising and lowering of implements. Do not attempt to gauge the depth with this lever unless so instructed in the implement manual. Plows must be free to float up and down and to seek their own level as determined by the hitch setting. The depth adjusting crank (*Illust. 15*) serves to control the working depth of plows and various other implements. The leveling crank controls leveling as required for plowing when opening up a furrow or for a change in plowing depth. The diagonal link permits the plow to swing from side to side, when the lock bolt is loose so that the diagonal link is free to swing. The stop collar (*Illust. 16*) should be set approximately six inches away from the swivel on the lift rod to permit the plow to float up and down.

Coupling the Implements

Adjust the height of the hitch socket with the Farmall Touch-Control and level the hitch with the leveling crank so the prong of the implement can enter the hitch socket when the tractor is backed against the implement (*Illust. 15*). The latch snaps shut when the prong reaches the proper position.

To uncouple the implement on ground level, lower the implement to the ground, reach back and lift the hitch latch (*Illust. 16*) with the forefinger. If the latch is difficult to disengage, back the tractor slightly against the implement to relieve the strain on the latch. The latch will remain open until the implement prong is withdrawn.

Hitch Adjustments

The height of the hitch determines the working depth of the implement. The depth adjusting crank (*Illust. 15*) raises and lowers the front end of the pull bar to reach the desired working depth called for in the instructions in your implement manual.

Pull Bar Extension

(Tractors with Fast-Hitch)

A pull bar extension is available for pulling trailing implements. When in use, the extension is attached to the pull bar with the hitch hole toward the rear. It is held in place by a pivot pin and a quick attachable cotter pin. When not in use, the pull bar extension should be turned with the hitch hole toward the front. *See Illust. 15 and 16.*

When plowing, the lock bolt (or hand screw) on the diagonal link must be loose or unscrewed far enough so that the diagonal link is free so the plow can swing from side to side. Additional lateral swing can be obtained when required, by removing the quick-attachable cotter pin "A" (*Illust. 15*) from the pull bar support.

When operating with middlebusters or cultivators, the lock bolt must be screwed in tightly to keep the unit in a rigid position to prevent the implements from swinging.

When cultivating crops with high foliage, turn the depth adjusting crank so the hitch bail is set at its highest position. If necessary the Fast-Hitch pull bar and diagonal links may be removed to provide more clearance under the tractor.

Fast-Hitch Load Limitations

Caution! Do not overload the rear axle or the Fast-Hitch components with the implement or accessories.

The transport loads listed below are considered satisfactory for Fast-Hitch operation. The implement weights shown in the following examples do not include any allowance for additional weights on the implement.

a. Five-foot disk harrow with ten 20-inch disks—360 pounds—use a rear wheel tread setting up to 56 inches.

b. Rotary hoe—355 pounds—use a rear wheel tread setting up to 56 inches.

c. Utility carrier.

Farmall Cub Tractor—with a 400 pound payload in the center of the platform—use a rear wheel tread setting up to 56 inches.

International Cub Lo-Boy Tractor—use a rear wheel tread setting up to 56 inches—with the front tire tubes filled three-quarters full with a calcium chloride solution, the pay load must be proportioned to the amount of front end weight as follows:

Maximum Carrier Payload	Minimum Front End Weight
200 pounds..	1 set of one-piece weights (50 lbs.)
250 pounds..	1 set of two-piece weights or 2 sets of one-piece weights (100 lbs.)
315 pounds..	1 set of two-piece weights and 1 set of one-piece weights (150 lbs.)
375 pounds..	1 set of two-piece weights and 2 sets of one-piece weights (200 lbs.)

In general, the loads must decrease as the tread settings increase, and the loads must decrease as the distance from the rear axle to the center of gravity of the load increases.

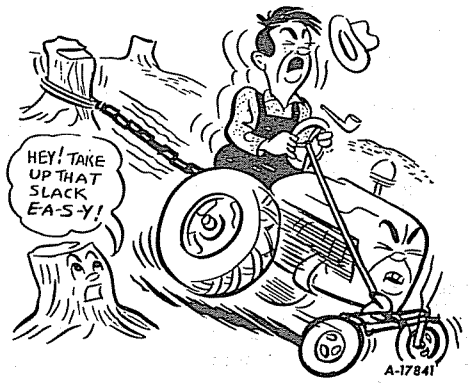
HITCHING THE IMPLEMENT TO THE TRACTOR

(Tractors with Regular Drawbar)

Do not attempt to pull when the drawbar is removed.

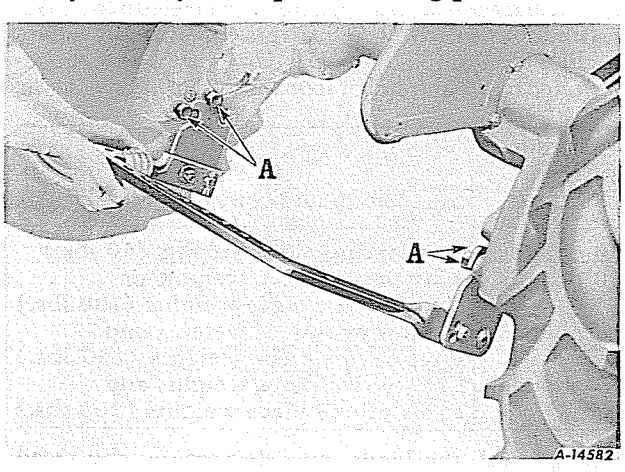
Drawbar bolts must be kept tight.

All hitches for trailing implements must be attached to the drawbar.



Always hitch to the tractor drawbar, and when pulling a heavy load, stumps. rocks, or fence posts—don't take up the slack of the chain with a jerk.

The tractor exerts its pulling power on pull-behind implements by means of the drawbar, which is adjustable up and down to accommodate different hitches. Proper hitching will save both the tractor and the implement it is pulling from undue strains. Hitch so the center line of pull of the tractor will fall in line with, or at least near, the center line of draft of the trailing implement. Hitching to one side or the other of the line of draft will cause stresses and strains on both the tractor and the implement being pulled, frequently great enough to do permanent damage. Incorrect hitching will also tend to make the tractor difficult to steer and will result in unsatisfactory work by the implement being pulled.



Illust. 18

Removing the drawbar on the Farmall Cub.

When using a long chain to hitch the tractor to the load, drive the tractor forward slowly until all of the slack is taken out of the chain.

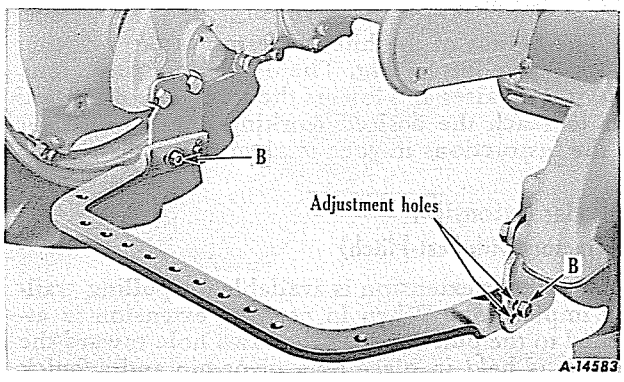
The quick-attachable drawbar can be easily removed. To remove the drawbar, loosen the bolts "A" (*Illust. 18*) and unhook the complete drawbar. **Farmall Cub tractor:** The drawbar can be reversed and placed in the forward position when so desired.

Adjusting the Drawbar

The drawbar can be set at three different heights to obtain the proper hitch position.

To raise or lower the drawbar, remove bolts "B" (*Illust. 18A*), and raise or lower the drawbar to the upper or lower hole in the drawbar bracket. Replace bolts "B" and tighten securely.

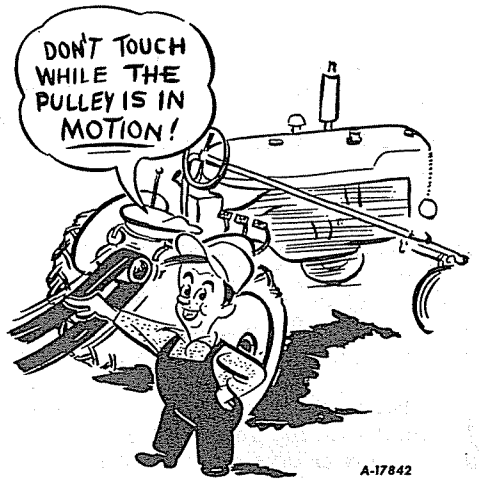
When the tractor is pulling power equipment, be sure that all power line shielding is in place and in good order.



Illust. 18A

Drawbar adjustment on the Farmall Cub.

OPERATING THE BELT PULLEY AND POWER TAKE-OFF

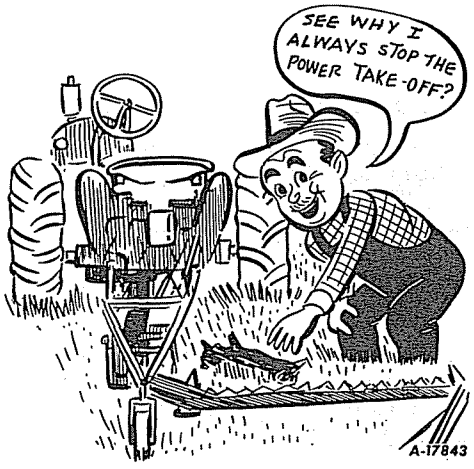


Don't put on or remove the belt from the belt pulley while the pulley is in motion.

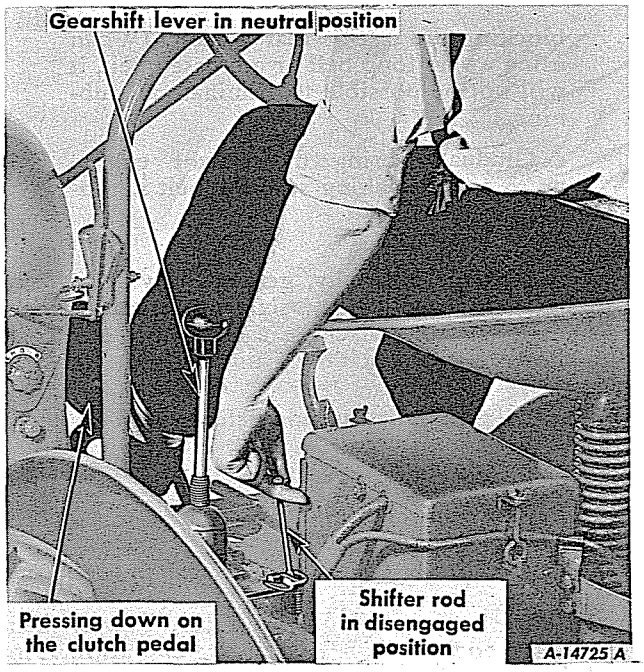
If your tractor is equipped with a belt pulley or power take-off, the following instructions and precautions should be carefully studied and followed.

The belt pulley and power take-off are started and stopped by the same engine clutch as the tractor. Be sure to disengage the engine clutch before moving the belt pulley or power take-off shifter rod. The belt pulley is driven by the power take-off shaft; therefore, the same shifter rod is used to operate either the belt pulley or power take-off. The shifter rod should always be in the disengaged (forward) position (*Illust. 19*) when the belt pulley or power take-off is not in use.

Note: When the International Cub Lo-Boy tractor is equipped with the Fast-Hitch, the pull bar and support assembly must be disconnected and lowered to the ground by removing the pin "B" at the leveling screw housing and the pin "C" at the lateral link clevises. Then move the diagonal link to one side. *See Illust. 16.*



Always stop the power take-off before dismounting from the tractor.



Illust. 19

Moving the belt pulley and power take-off shifter rod to the engaged position.

Operating the Belt Pulley or Power Take-Off with the Tractor Standing Still

1. The transmission gearshift lever must be in the neutral position.

2. Move the engine speed control lever back to low idle speed.

3. Depress the clutch pedal to disengage the engine clutch.

4. Press down on the shifter rod (*Illust. 19*) and move it back to the engaged position; release the shifter rod and allow it to lock in place.

5. Slowly release the clutch pedal.

6. Observe the following instructions when using the tractor belt pulley:

a. Secure the implement to receive power in the desired location.

b. Align the tractor belt pulley with the implement pulley. Keep the tractor level if possible.

c. Observe the direction of belt travel indicated on the belt, and install the belt accordingly to prevent damaging it.

d. Tighten the belt enough to prevent the belt from rubbing against itself during operation. Do this by driving the tractor into the belt, locking the brakes, and

Continued on next page.

blocking the tractor rear wheels. (When using a very long belt or a crossed belt, it will not be possible to eliminate all rubbing.)

e. Gradually bring the tractor engine up to speed, making sure the belt is running true.

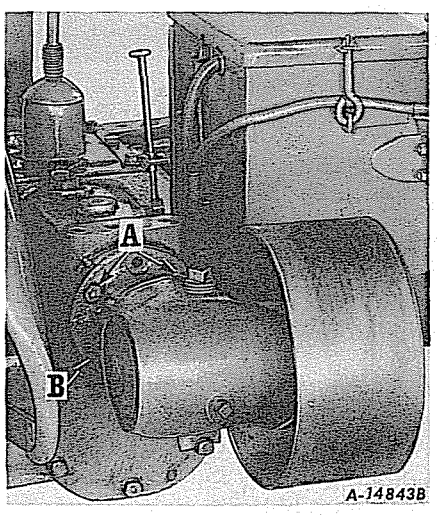
Note: Static electricity, generated by belt work, can be discharged harmlessly from tractors with pneumatic tires, by attaching a chain to the tractor and allowing it to touch the ground.

For belt and pulley speeds, refer *to page 44.*

Operating the Power Take-Off with Tractor in Motion

Follow the first four steps outlined above; then release the power take-off shifter rod and allow it to lock in place. Keep your foot pressed down on the clutch pedal (in the disengaged position), advance the engine speed control lever and move the transmission gearshift lever to the speed that is desired to run the tractor. Slowly release the clutch pedal. This will start the tractor in motion with the power take-off in operation.

Changing from Belt Pulley to Power Take-Off



Illust. 20

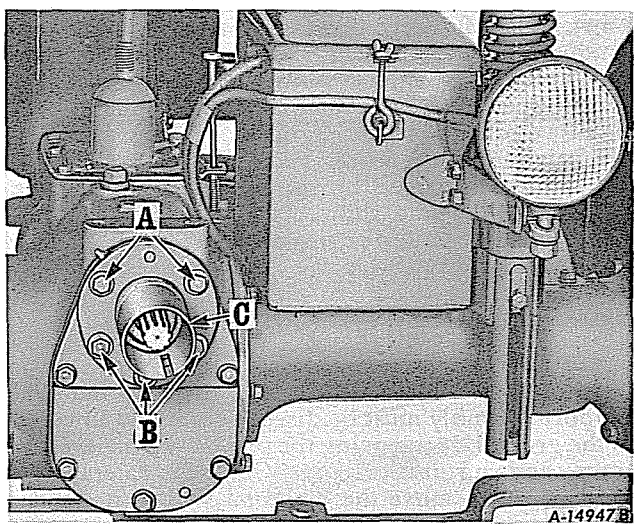
Belt pulley and power take-off assembled on Farmall Cub Tractor.

Remove two 3/8 N.C. x 1 5/8-inch cap screws "A" (*Illust. 20*) and three 3/8 N.C. x 1 3/8-inch cap screws "B" and remove the belt pulley and housing, complete. Set the belt pulley and cap screws aside for future use.

Replace the removed cap screws with the extra cap screws supplied with the belt pulley and power take-off. Use two 3/8 N.C. x 1 3/8-inch cap screws at "A" (*Illust. 20A*) and the three 3/8 N.C. x 1 1/8-inch cap screws at "B." Use flat washers in front of the lock washers and tighten the cap screws securely.

Always cover the power take-off exposed shaft with the guard "C" (*Illust. 20A*) when the power take-off is not being used.

The specifications for the power take-off will be found *on page 44.*



Illust. 20A

Power take-off assembled on Farmall Cub Tractor.

Changing from Power Take-Off to Belt Pulley

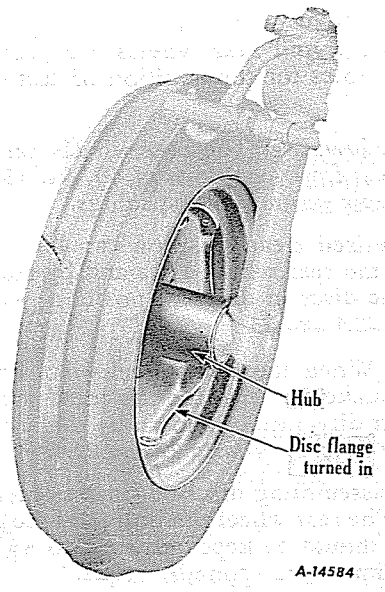
Remove two 3/8 N.C. x 1 3/8-inch cap screws "A" (*Illust. 20A*) and the three 3/8 N.C. x 1 1/8-inch cap screws at "B." Apply a light coating of grease to the power take-off shaft and female spline in the belt pulley housing. Then slide the belt pulley and housing complete on to the power take-off splined shaft.

Insert the two 3/8 N.C. x 1 5/8-inch cap screws with lock washers at "A" (*Illust. 20*) and the three 3/8 N.C. x 1 3/8-inch cap screws with lock washers at "B" and tighten all cap screws securely.

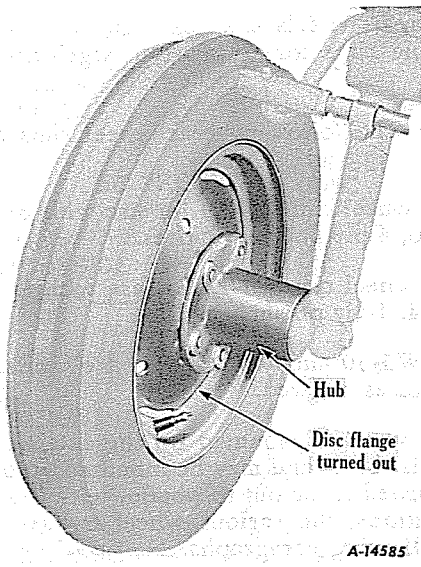
Check the lubricant in the belt pulley housing as instructed in "Lubrication Guide" *on page 37.*

WHEELS

Front Wheels



Illust. 21
Front wheel with disc flange turned in.



Illust. 21A
Front wheel with disc flange turned out.

The front wheels are steel disc wheels with attached rims for 4.00–12 and 4.00–15, 4-ply tractor-type tires.

Each wheel is mounted on the hub with five special bolts and may be mounted with the disc flange turned in or out to obtain different treads as described *on page 22.*

The hubs rotate on tapered roller bearings. An oil seal and felt washer are used at the inner end of the hubs.

Adjusting

Farmall Cub Tractor—The front wheels can be adjusted to treads of 40⅝ inches or 46⅜ inches. The wheels are in the 40⅝-inch tread position when the disc flanges are turned in. *See Illust. 21.* To obtain the 46⅜-inch tread, reverse the wheels on the hubs so that the disc flanges are turned out. *See Illust. 21A.*

International Cub Lo-Boy Tractor — The front wheels can be adjusted to treads of 43 inches or 49 inches. The wheels are in the 43-inch tread position when the disc flanges are turned in. *See Illust. 21.* To obtain the 49-inch tread, reverse the wheels on the hubs so that the disc flanges are turned out. *See Illust. 21A.*

Note: The front wheels must not be mounted with the disc flanges turned out when the tractor is carrying heavy front end weight.

Check the hub bolts for tightness every month or after every 250 hours of operation. Keep them tightened to 56 minimum to 63 maximum foot-pounds torque.

Rear Wheels

The rear wheels are steel disc wheels with demountable rims for tractor-type agricultural tread tires.

Rims—The following rear wheel rims are available:

Rear wheel rim W5-30 for use with 6–30, 2-ply and 7–30, 4-ply pneumatic tires.

Rear wheel rim W7-24 for use with 8–24, 4-ply and 9–24, 4-ply pneumatic tires.

The W5-30 and W7-24 rims are furnished with the tractor as ordered.

Each wheel is mounted on the axle flange with five special bolts and may be mounted with the disc flange turned in or out to obtain, with the different rim positions, the various wheel treads described in the following paragraphs.

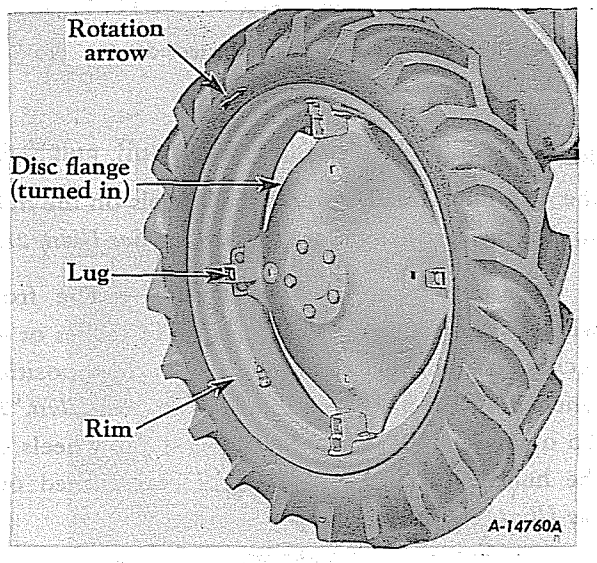
Both front and rear wheels are provided with mounting holes for the addition of cast-iron wheel weights.

Tread adjustment—The rear wheels can be set in five different tread positions of 40, 44, 48, 52 or 56 inches to suit various crop spacings.

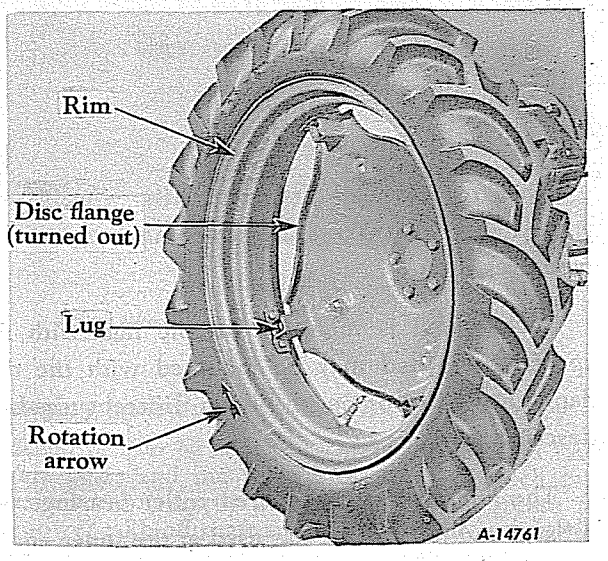
The desired tread position can be obtained by reversing the rear wheel discs and by attaching the rims to the discs in different positions as shown *in Illusts. 22, 22A and 23.*

Note: When the rear wheel discs or rims are reversed, make sure that the tire tread will rotate in the correct direction as shown by the arrow on the side of the tires. *See Illusts. 22 and 22A.*

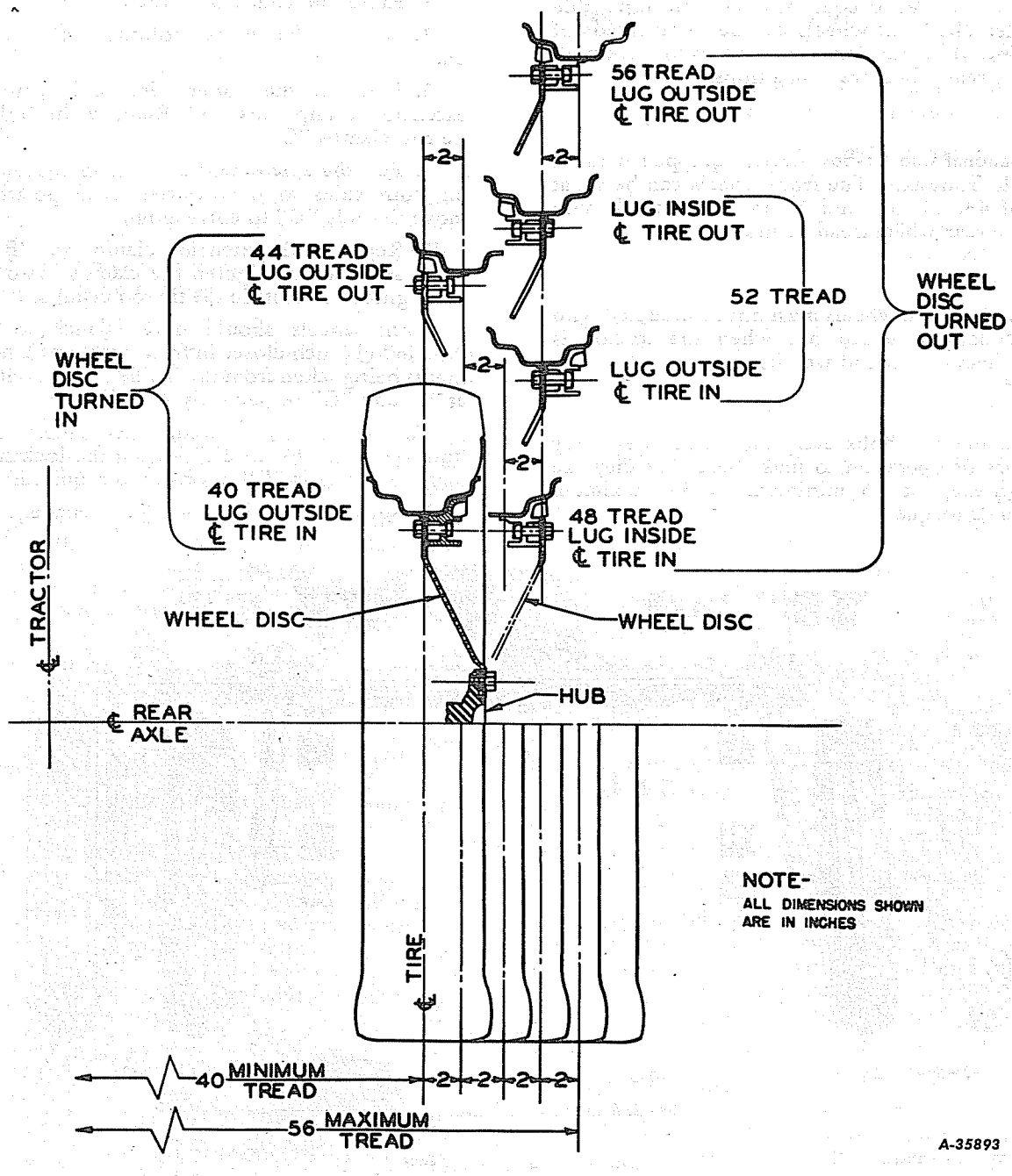
When assembling discs or rims, tighten all bolts securely. The rear wheel rim bolts and the rear wheel hub bolts should be kept tightened to 85 minimum to 95 maximum foot pounds torque.



Illust. 22
Rear wheel with disc flange turned in.



Illust. 22A
Rear wheel with disc flange turned out.



Illust. 23

Rear wheel tread positions.

Adjustable Front Axle

Farmall Cub Tractor equipped with an adjustable front axle: The front wheels can be set at treads of 40⅝, 44⅝, 48⅝, 52⅝ and 56⅝ inches to track with respective rear wheel tread positions.

International Cub Lo-Boy Tractor equipped with an adjustable front axle: The front wheels can be set at treads of 43, 47, 51, and 55 inches to track with respective rear wheel tread positions.

Note: The front wheels must not be mounted with the disc flanges turned out when the tractor is carrying heavy front end weight.

Check the hub bolts every month or after every 250 hours of operation to make sure that they are kept tightened at 56 minimum to 63 maximum foot-pounds torque.

To Adjust the Tread Widths

1. Raise the front end of the tractor.

2. Loosen the bolts holding axle extension clamps "A."

3. Pull out the cotter pins and remove axle extension clamp pins "B." Remove the bolts from tie rod clamps "C."

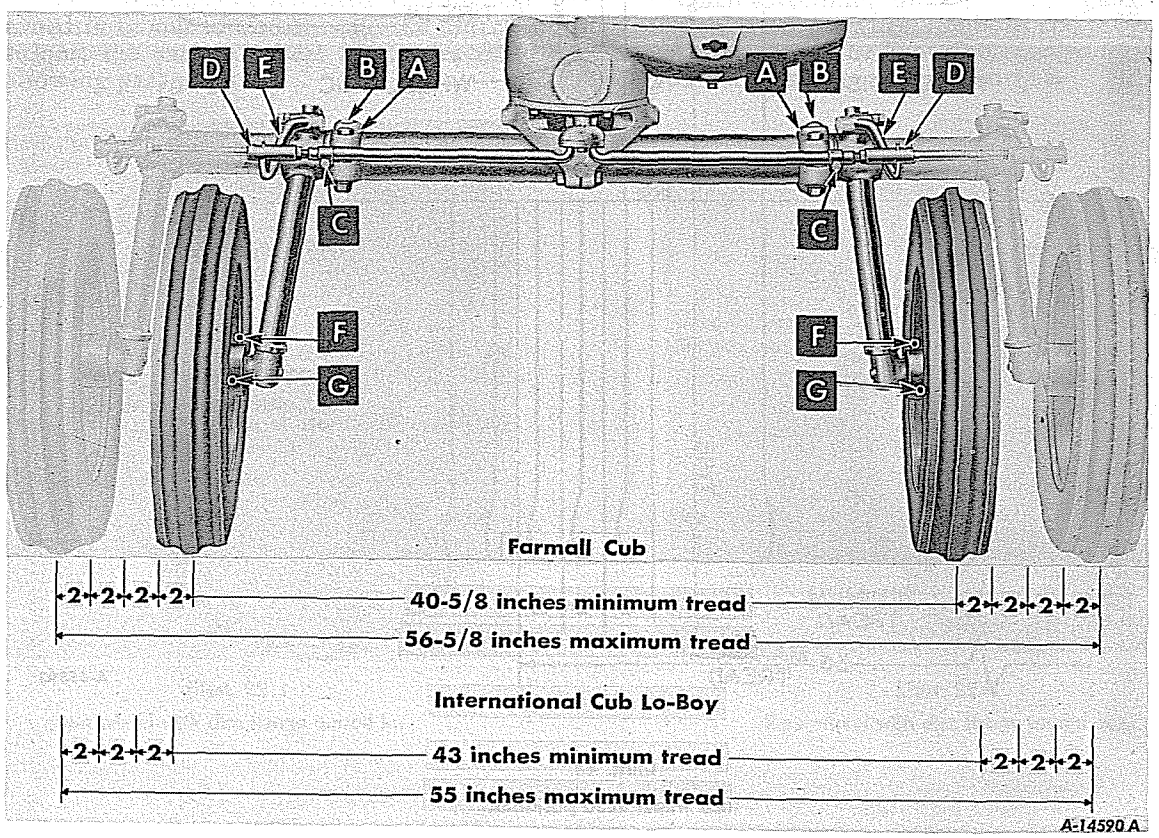
4. Pull the axle extensions out an equal distance on both sides to the desired tread position and move tie rods "D" to correspond.

5. Replace axle extension clamp pins "B" in the holes selected and tighten the clamps. Also replace and tighten the bolts in the tie rod clamps.

Front wheels should have ⅛-inch to ¼-inch "toe-in" (⅛ inch closer in front than rear), measurements being taken from the inside of the front wheels at "F" and "G" respectively. *See Illust. 24.*

To adjust the "toe-in," disconnect steering knuckle arms "E" at "D," loosen the lock nuts and turn tie rod ends "D" in or out as required.

Be sure to make the arm adjustments equal.



Illust. 24

Adjustable front axle showing variable wheel treads.

PNEUMATIC TIRES

Follow the instructions and recommendations shown below in order to secure maximum life and efficient service from the pneumatic tires.

Inflation

Keep the pneumatic tires properly inflated to the pressures shown in the chart below. Underinflation will damage the tire cord body and may also cause the tire to slip on the rim, thus tearing out the tube valve stem. Overinflation results in excessive slippage, which causes rapid tire wear.

Check the air pressure once a week with an accurate low-pressure gauge having one-pound graduations. Do not allow the air pressure to drop below the recommendations.

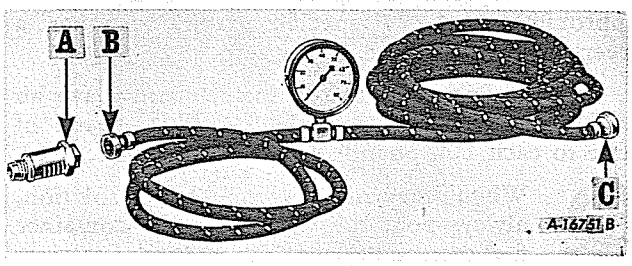
Tires can be inflated with a pressure pump, hand pump, or a spark plug pump. Spark plug pumps can be purchased from International Harvester dealers.

Always see that tire valve caps are in place and screwed on tightly. The caps prevent the loss of air through the valve core, and also prevent loose soil, mud, gravel, snow, and ice from entering and damaging the valve core and air chamber in the tires.

Using the Spark Plug Pump

Note: A carbureted engine must be used as the source of power.

Remove one of the spark plugs from the tractor engine, or any carbureted engine, and replace it with the pumping element "A" having the correct spark plug thread size. *See Illust. 25.* Attach one end "B" of the pump hose to the pumping element and the other end "C" to the valve stem of the tire to be inflated. Start the engine and run it at low speed for maximum efficiency.



Illust. 25
Tire pump, hose and pressure gauge.

Operating Pressure for Low-Pressure Tractor Tires

Caution! Adjust air pressure in tires as indicated in the following table immediately upon receiving your tractor.

Front Tire Loads in Pounds at Various Inflation Pressures

Underscoring indicates maximum recommended load.

Tire Size	Ply Rating	Pounds per square inch: 20	24	28	32	36	40	44
		Kilograms per square centimeter: 1.40	1.68	1.97	2.25	2.53	2.81	3.09
F-2 Tread								
4.00-12	4	330	365	400	435	465	495	520
4.00-15	4	390	435	475	515	550	585	620
I-1 Tread								
4.00-12	4	450	500	550	595	635	675	

Rear Tire Loads in Pounds at Various Inflation Pressures

Underscoring indicates maximum recommended load.

Tire Size	Ply Rating	Pounds per square inch: 12	14	16	18	20	22	24
		Kilograms per square centimeter: .84	.98	1.12	1.26	1.40	1.54	1.68
R-1 Tread								
8-24	4	965	1055	1140	1220	1300	1370	
9-24	4	1215	1330	1435	1535			
7-30	4	870	950	1030	1100	1170	1230	1300
R-3 Tread								
8-24	4	965	1055	1140	1220	1300	1370	
9-24	4	1215	1330	1435	1535			

Tire Code Marking	Tire Industry Type
F-2	Agricultural
R-1	Agricultural
R-3	Industrial
I-1	Rib Implement

Rear wheel tire loads shown in tables may be increased up to 20% with no increase in inflation when used on tractors with mounted implements and operated at speeds not exceeding 10 miles per hour. Tire loads should be calculated to include FULL bins or tanks.

Traction and Weights

The recommended air pressures are shown above. The tractor should not be operated with tires improperly inflated. To insure maximum hours of service, watch the tread lugs. If they wear down too fast, immediately add more weight to reduce slippage. Check for high air pressure.

See your International Harvester dealer for information.

Shipping Tractors Equipped with Pneumatic Tires

When tractors are transported on a carrier, such as railroad cars or trailers, inflation pressures should be as follows to make possible rigid blocking and to prevent bouncing.

Rear tires may be inflated up to 30 pounds pressure. Front tire inflations should not exceed maximum pressures shown in table. This higher pressure must be reduced to operating inflation BEFORE the tractor is removed from the carrier.

Towing

When towing is necessary, use a rope, chain, or cable and have an operator steer the tractor and operate the brakes.

Attach a tow rope, chain, or cable around the front axle and steering gear housing. When towing a tractor, do not exceed a speed of 20 m.p.h.

Mounting Tires on the Rim

After mounting a new or old tire on the rim, inflate it to 30 pounds pressure to seat the tire bead on the rim flange and to prevent the tire from creeping and shearing off the valve. Then deflate or inflate the tire to the correct operating pressure.

Wheel Weights

The drawbar pull of a tractor can be increased by the addition of weight to the driving wheels, either by adding cast-iron weights to the wheels, or by the use of liquid in the tire tube.

The amount of the increase in drawbar pull by the addition of certain definite weights varies with the type of soil. When very heavy weight is required, both liquid and cast-iron weights can be used.

After adding weight to the rear wheel it may be necessary to readjust the height of drawbar to get the correct alignment.

Overloading

Do not load tires beyond their rated capacity. When adding weights, consideration must be given so as not to exceed the load capacity of the tire.

Liquid Weight

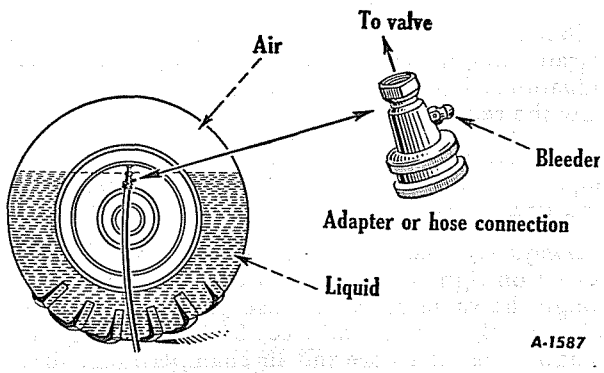
Tractor tire tubes can be filled three-quarters full with liquid, using clean water for temperatures above freezing (+32° F.). A calcium chloride solution ($CaCl_2$) is recommended when operating in freezing temperatures.

Methods of Putting Liquid into the Tube

Purchase an adapter (*Illust. 26*) from your International Harvester dealer. The adapter is provided with a bleeder for letting out the air displaced by the liquid.

Jack up the tractor and revolve the tire until the valve stem is on top. Remove the valve core housing and screw on the adapter then attach a water hose to adapter.

The liquid can be injected into the tube from a tank placed at least five feet higher than the tire, by using a hand force pump or by using compressed air and a pressure tank filled with liquid.



Illust. 26

Tire three-quarters full of liquid.

Remove the hose and adapter; then replace the valve core housing, and inflate the tire to the correct operating pressure.

Liquid Weight for Freezing Temperatures

Calcium chloride solution, using a 25% mixture, which is approximately 20 pounds of flaked calcium chloride to 10 U. S. gallons of water, is recommended when freezing temperatures prevail.

The strength of the solution can be checked with a battery hydrometer. A 25% solution measures approximately 1.225 specific gravity and has a freezing point of 25° F. below zero.

Caution! Some calcium chloride flakes have an acid reaction. It is advisable to add 1 pound of lime to each 100 pounds of calcium chloride used.

When preparing calcium chloride solution, always pour the water into the container first then add the correct amount of calcium chloride crystals, stirring the mixture thoroughly. Never pour the water on the calcium chloride flakes. After the solution is mixed, allow it to cool before using.

Valve Stem Mounting Cones or Nuts

Valve stem mounting cones or nuts are furnished with all rear wheel tire tubes having a valve stem for inserting liquids, and are mounted on the valve stem at the factory.

The purpose of the cone (or nut) is to hold the valve stem in the valve hole when mounting the tire, particularly when liquid is used in the tire. If the tire is mounted or the liquid inserted without the cone (or nut), the valve stem is very apt to be pulled into the rim and will require much extra work to get it through the valve hole.

Care of Tires

Avoid stumps, stones, deep ruts and other hazards. Cuts in tires should be repaired immediately as neglect decreases the tire life.

Keep tires free from oil and grease as both destroy rubber.

After using the tractor for spraying—insect control work—use water to remove any chemicals that may be on the tires.

Tire Chains

For wet grass or ground conditions, use lug-type chains. The flexing of the tire and creeping of chains will break the mud loose as the wheel rotates.

There is a possibility of the tire slipping within the chain; to prevent this, the use of spring-type chain fasteners is recommended.

WHEEL WEIGHTS

Rear Wheel Weights

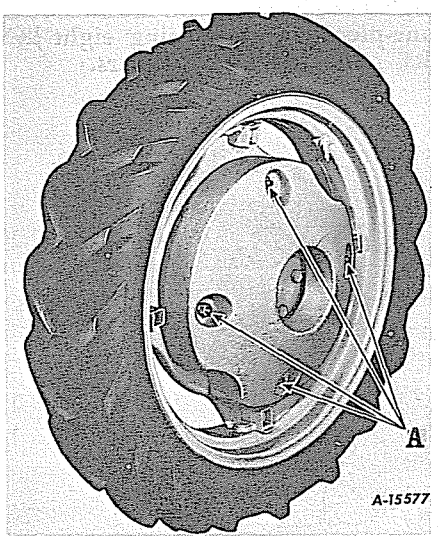
The rear wheel weights weigh approximately 150 pounds each and either one or two can be attached to each rear wheel to reduce slippage and tire wear and increase traction of rubber tired tractors.

The first set of rear wheel weights includes a set of two weights and eight ½NC x 3-inch bolts, nuts and lock washers for attaching the weights to the rear wheels at "A" (*Illust. 27*).

If additional weight is desired a second set of weights can be attached to the first weights by using four ½NC x 6¼-inch bolts, nuts and lock washers at "B" (*Illust. 27A*).

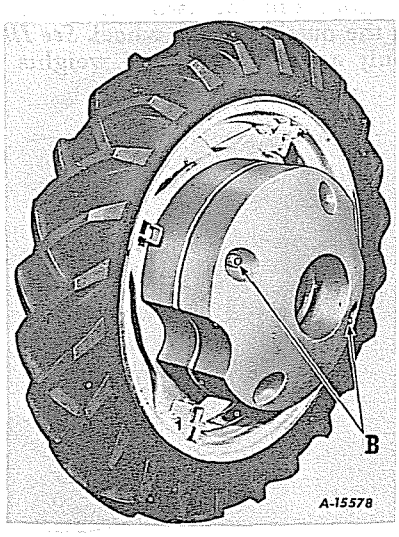
Before attaching the second rear wheel weights, it is necessary to remove two bolts from each first weight and replace them with the longer bolts provided with the second weights.

If the second weights are removed, the two shorter bolts in each first weight previously removed, must be reinstalled.



Illust. 27

First rear wheel weight mounted on wheel.



Illust. 27A

First and second rear wheel weights mounted on wheel.

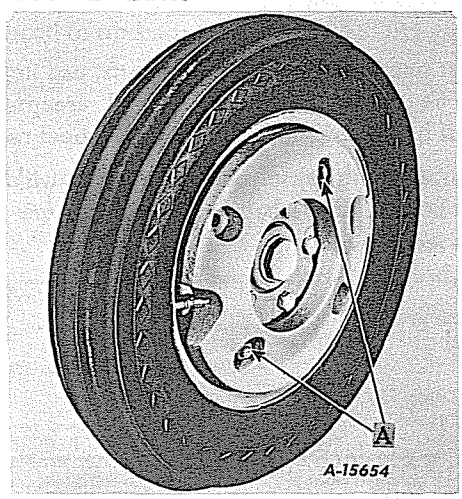
WHEEL WEIGHTS

Front Wheel Weights (One-Piece)

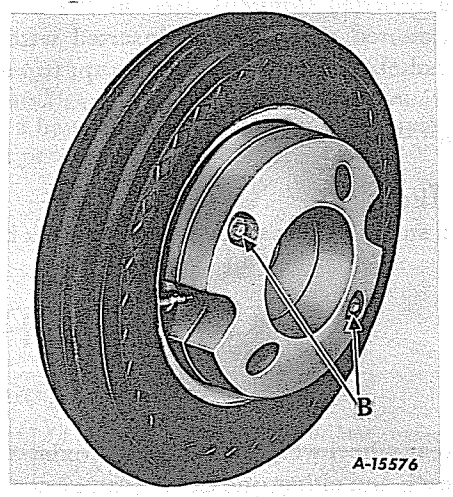
The one-piece front wheel weights weigh approximately 26 pounds each, and either one or two can be attached to the outside of each front wheel. To increase steerability, front wheel weights are recommended for use as a front end counterbalance whenever heavy loads are superimposed on the drawbar, or when heavy equipment is to be mounted on the rear end of the tractor.

The first set of front wheel weights includes a set of two weights and four ½NC x 1¾-inch bolts, nuts and lock washers for attaching the weights to the front wheels at "A" (*Illust. 28*).

If additional weight is desired a second set of weights can be attached to the first weights by using four ½NC x 3⅜-inch bolts, nuts and lock washers at "B" (*Illust. 28A*).



Illust. 28
First front wheel weight mounted on wheel.



Illust. 28A
First and second front wheel weights mounted on wheel.

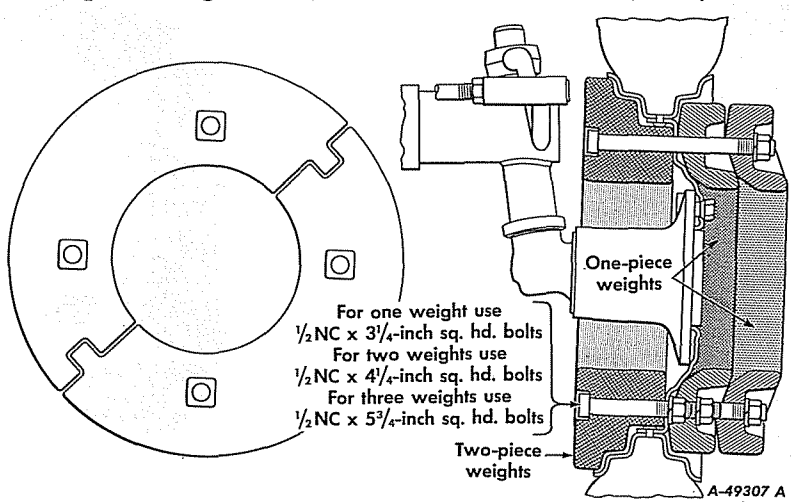
Front Wheel Weights (Two-Piece)

Two-piece front wheel weights are available to provide additional weight for the front end of the tractor when operating over hilly ground or when a scoop or scraper is being used on the rear of the tractor. These weights are mounted on the inside of each wheel. Each half weighs approximately 25 pounds. A set of these weights can be used either with or without one or two one-piece weights attached on the outside of the wheel. *See Illust. 28B.*

When only a set of two-piece weights is to be attached, use eight ½NC x 3¼-inch bolts, nuts, and lock washers.

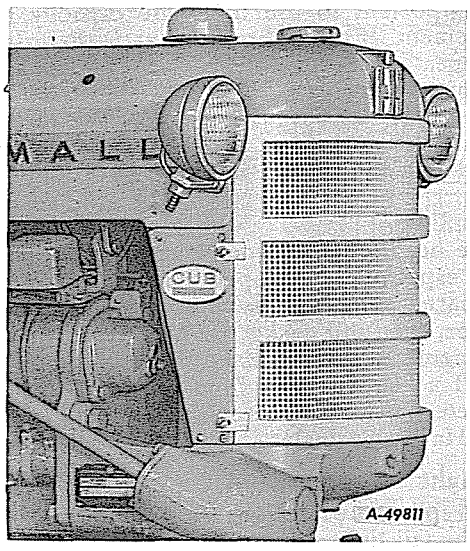
To mount a set of one-piece weights on the outside of the front wheels with two-piece weights on the inside, use eight ½NC x 4¼-inch bolts, nuts, and lock washers.

If additional weight is desired, a second set of one-piece weights can be added on the outside of the first set of one-piece weights, using eight ½NC x 5¾-inch bolts, nuts, and lock washers.



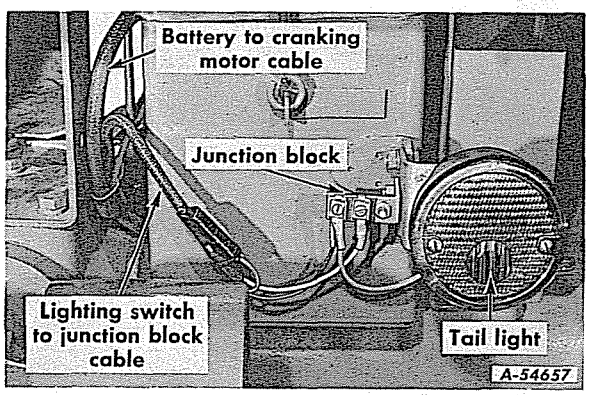
Illust. 28B
Two-piece front wheel weights.

STARTING AND LIGHTING EQUIPMENT



Illust. 29

Headlights and connections.



Illust. 29B

Tail light and battery box.

Description

The six-volt electrical system of the tractor consists of a generator, voltage regulator, cranking motor, lights, lighting switch, electrical instruments, a six-volt battery, and either a magneto or a battery ignition unit. Colored plastic-covered cables are contained in a harness of nonmetallic, oilproof, and waterproof woven braid.

Use the illustrations *on pages 29 and 30,* and the wiring diagrams *on pages 29 and 30* as a guide for identifying the various electrical units and for tracing the electrical cables and connections. For additional information, see the tractor Preventive Maintenance Manual. Be sure all terminals are clean and securely fastened.

Battery and Cables

Before working on any part of the electrical system, disconnect the battery ground cable. *See Illust. 30.* Do not reconnect this cable until all electrical work has been completed. This will prevent shorting and causing damage to any of the electrical units.

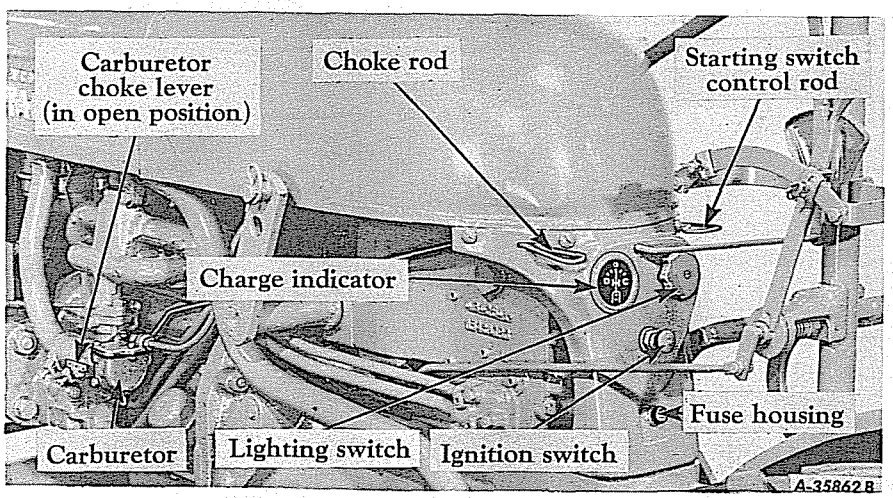
Lighting Switch

The lighting switch has four positions: "OFF" position, "D"—dim lights, "B"—bright lights, and "R"—rear light.

Generator and Regulator

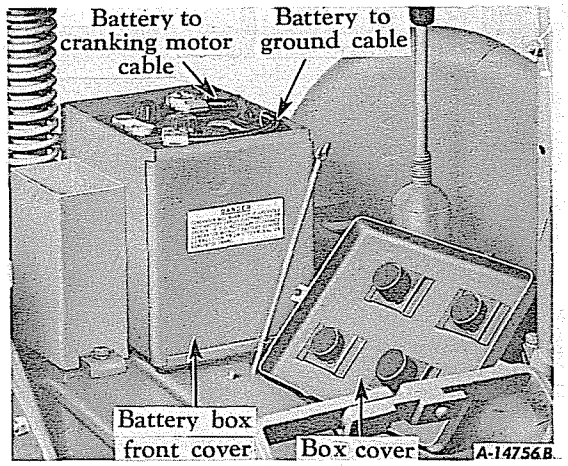
The generator supplies current to keep the battery in a charged condition, and to replace the energy consumed by the cranking motor and lights. The generator on your tractor is sealed to prevent the entrance of dirt and moisture. It is hinge-mounted on the right side of the engine crankcase and is driven by a V-belt from the fan pulley. The generator, as received from the factory, has a fixed third brush which is set to give the maximum generator output.

Continued on next page.



Illust. 29A

Lighting switch and charge indicator.



Illust. 30
Battery and cables.

The generator charging rate is controlled by a voltage regulator which controls the generator output, thereby maintaining a satisfactory charging rate, and prevents the battery from overcharging under varying temperatures and operating conditions. It should not require adjustment or attention. If the regulator fails to operate correctly, see your International Harvester dealer.

Caution! Never place a jumper lead between or accidentally bridge the "BAT" terminal and the "F" terminal on the regulator, as this will damage the regulator.

Fuse

A cartridge-type SFE-20 fuse is in the housing near the bottom of the instrument panel (*Illust. 29A*). It is important to use the same capacity fuse for replacement. If the lights fail, check the fuse. If the fuse repeatedly burns out, check the electrical wiring for short circuits.

To install a new fuse, unscrew the fuse holder knob on the instrument panel (*Illust. 29A*), pull out the old fuse and replace it with a new one.

Headlights

The headlights on your tractor are sealed-beam lights especially developed for tractor operations. The parts are so constructed that the filament, reflector, lens, and gasket are all assembled in a unit permanently sealed against dirt, moisture, and corrosion. If a filament burns out or a lens breaks, the complete unit must be replaced. See your International Harvester dealer.

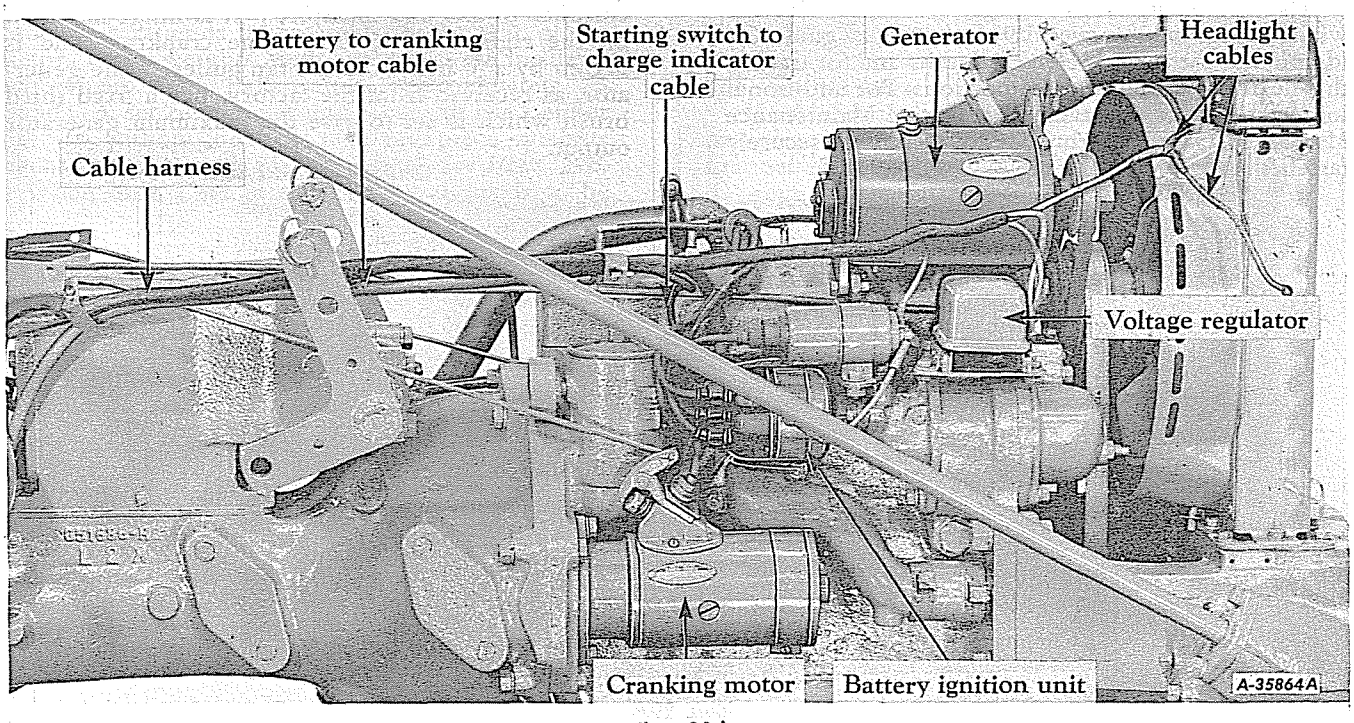
Tail Light

To replace the tail light lamp remove the red lens from the tail light and replace defective lamp with a new 3 candle power lamp (No. 142 303).

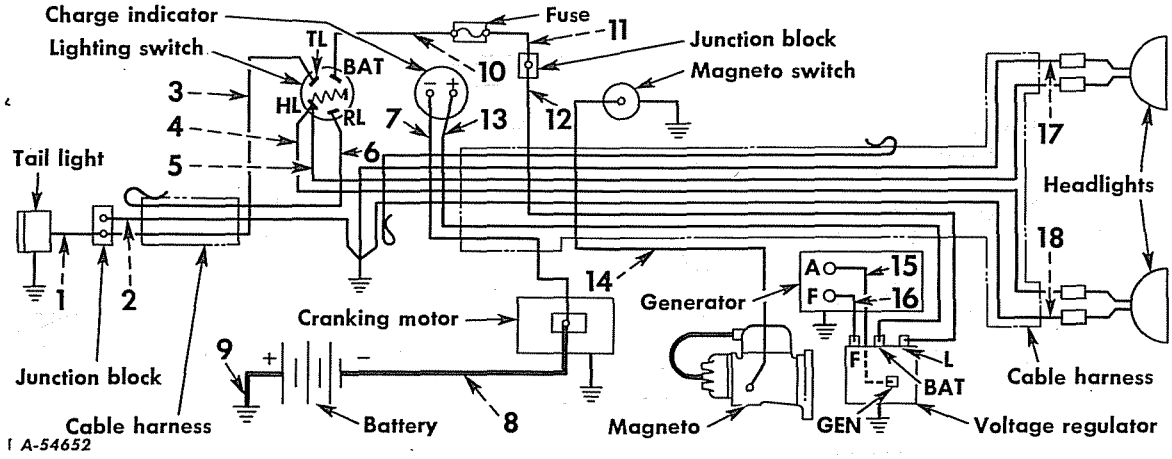
Combination Rear Light and Tail Light

The rear light on your tractor is a combination light with a sealed beam unit.

It is turned on by the lighting switch on the instrument panel and gives you a choice of red as a tail light or white as a rear light for field or highway use. Should a lens break or a filament burn out the complete sealed beam unit must be replaced. See your International Harvester dealer. To replace the tail light lamp remove the sealed beam unit and replace the tail light lamp with a 15 candle power lamp (6 Volt—No. 454 493).

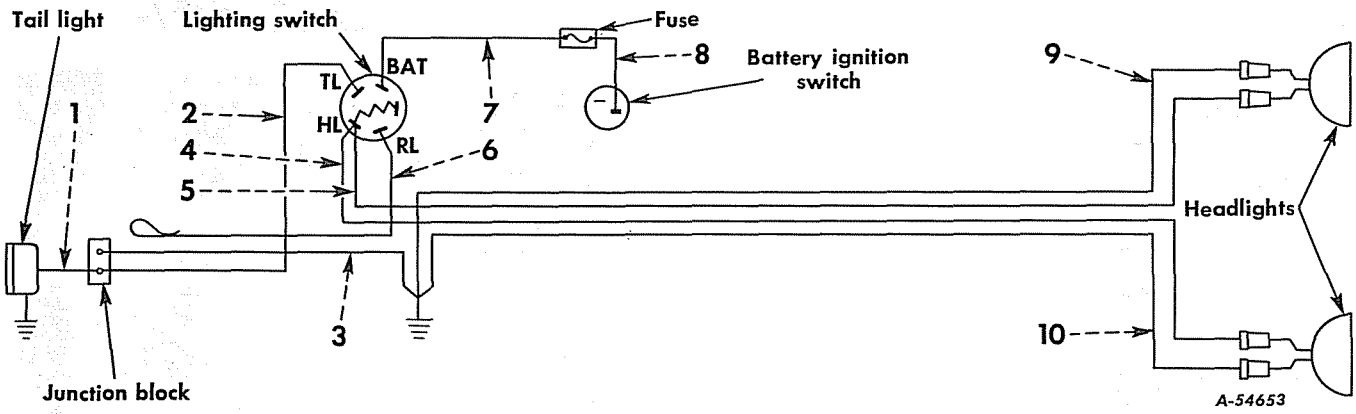


Illust. 30A
Cranking motor, generator, voltage regulator, and cables.



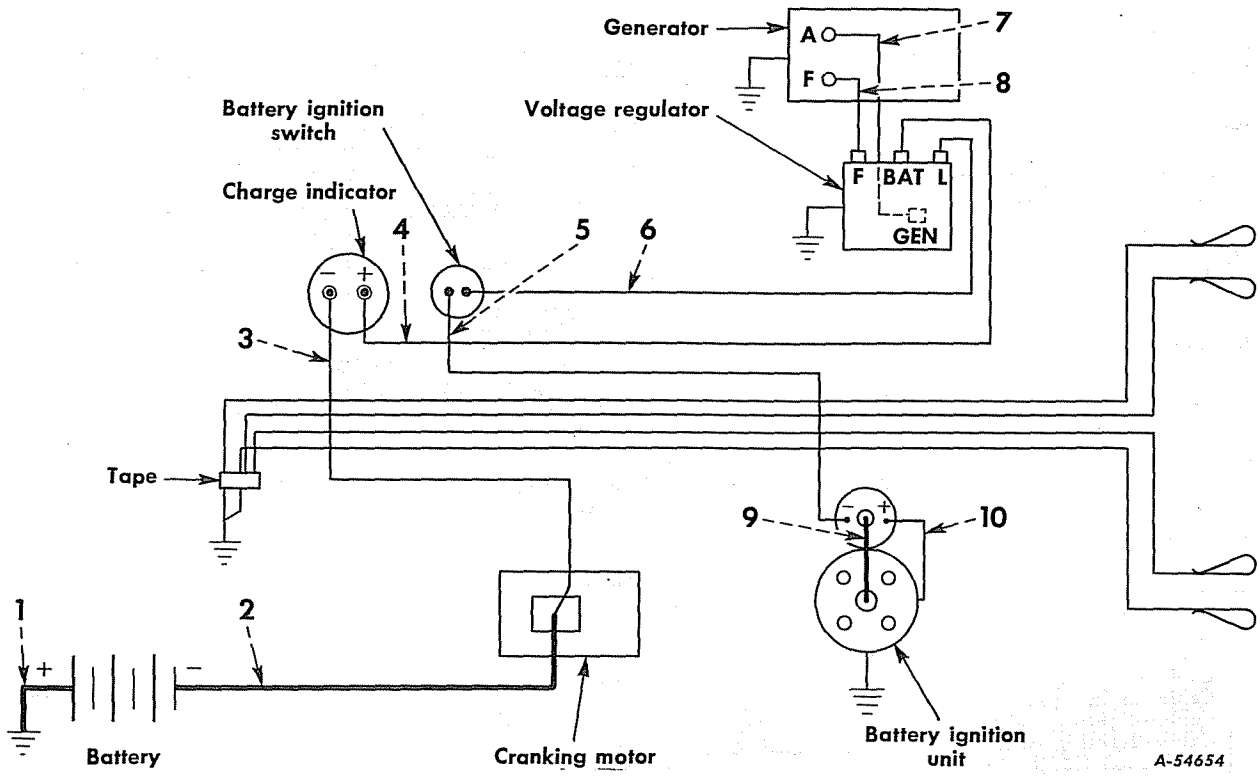
Illust. 31
Schematic wiring diagram for Farmall Cub and International Cub Lo-Boy Tractors with magneto ignition.

Ref. No.	Description	Ref. No.	Description
1	Cable—junction block to tail light.	12	Cable—regulator "L" terminal to junction block (light green).
2	Cable—junction block to ground (pink).		
3	Cable—lighting switch to junction block (black).	13	Cable—charge indicator to regulator "BAT" terminal (grey).
4	Cable—lighting switch to right headlight (black).		
5	Cable—lighting switch to left headlight (black).	14	Cable—magneto ignition switch to magneto.
6	Cable—lighting switch to rear lights (taped back at one end) (red).	15	Cable—generator "A" terminal to regulator "GEN" terminal.
7	Cable—charge indicator to starting switch (brown).	16	Cable—generator "F" terminal to regulator "F" terminal.
8	Cable—battery to starting switch.		
9	Cable—battery to ground.	17	Cable—left headlight to ground (pink).
10	Cable—fuse housing to lighting switch.	18	Cable—right headlight to ground (pink).
11	Cable—fuse housing to junction block.		



Illust. 31A
Electric lighting schematic wiring diagram for Farmall Cub and International Cub Lo-Boy Tractors equipped with battery ignition.

Ref. No.	Description	Ref. No.	Description
1	Cable—tail light to junction block.	7	Cable—lighting switch "BAT" terminal to fuse housing.
2	Cable—junction block to lighting switch "TL" terminal (black).	8	Cable—fuse housing to battery ignition switch terminal.
3	Cable—junction block to ground (pink).	9	Cable—left headlight to ground (pink).
4	Cable—lighting switch to right headlight (black).	10	Cable—right headlight to ground (pink).
5	Cable—lighting switch to left headlight (black).		
6	Cable—lighting switch to rear light (taped back at one end) (red).		

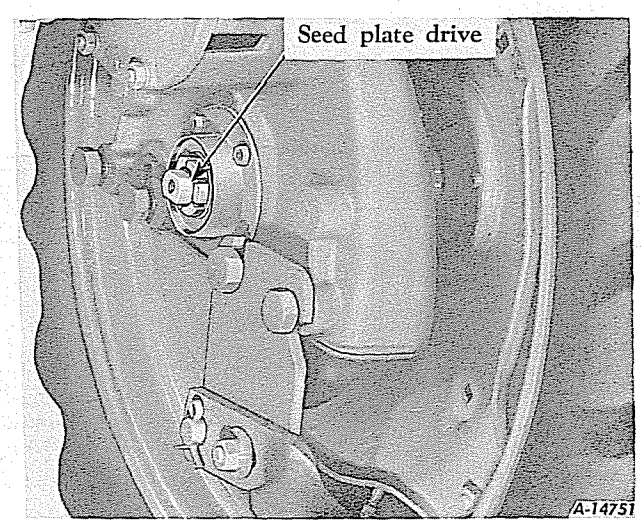


Illust. 32
Electric starting schematic wiring diagram for Farmall Cub and International Cub Lo-Boy Tractors equipped with battery ignition.

Index to reference numbers in Illust. 32.

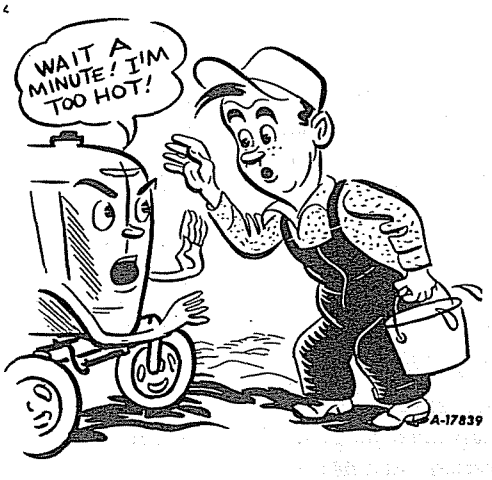
Ref. No.	Description
1	Cable—battery to ground.
2	Cable—battery to starting switch.
3	Cable—charge indicator to starting switch.
4	Cable—charge indicator to regulator "BAT" terminal (grey).
5	Cable—battery ignition switch to battery ignition unit.
6	Cable—regulator "L" terminal to battery ignition switch (light green).
7	Cable—generator "A" terminal to regulator "GEN" terminal.
8	Cable—generator "F" terminal to regulator "F" terminal.
9	Cable—coil to distributor (primary).
10	Cable—coil to distributor (secondary).

SEED PLATE DRIVE



Illust. 32A
Location of seed plate drive.

The seed plate drive, located on the inner side of the right rear axle (*Illust. 32A*) furnishes the power for seed planters, and for sowing fertilizer. Refer to your implement book for complete instructions.



If the motor overheats, allow the engine to cool off before removing the cap to fill the radiator. When removing the cap, be extremely careful to avoid being scalded by steam which has built up pressure in the radiator.

When the tractor is shipped from the factory it is equipped with a nonpressure-type radiator cap.

A pressure-type radiator cap is available from your International Harvester dealer as a replacement for the regular production radiator cap, if so desired.

Caution must be exercised in removing the pressure-type radiator cap when the water in the cooling system is hot. See instructions in the following section.

When the radiator is equipped with a nonpressure-type radiator cap, the water is circulated through the engine block, cylinder head, and radiator by the thermosiphon method. As the engine warms up, the water is heated, expands, and circulates back through the radiator where the water is cooled before again circulating through the engine.

When the radiator is equipped with a pressure-type radiator cap, the cooling system operates under pressure which is controlled by means of a regulating valve built into the radiator cap. Always use clean water (soft or rain water if possible).

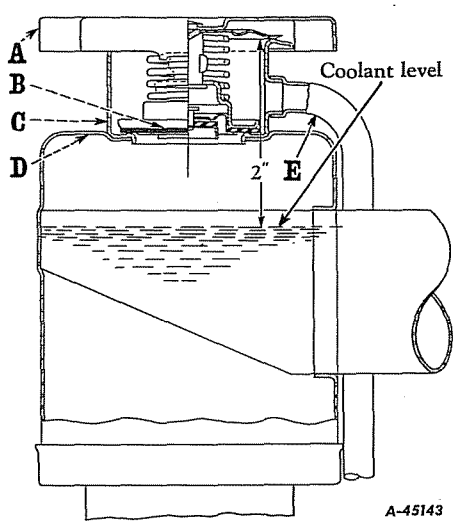
Adding Water to the Cooling System (When Equipped with Pressure-Type Radiator Cap).

Caution! If the water in the cooling system is hot and water is to be added, observe the following:

Turn radiator cap "A" (*Illust. 33*) slowly counterclockwise to the safety stop to allow the pressure or any steam to escape; then press down on the cap and continue to turn until the cap is free to be removed.

Allow the engine to cool and fill the radiator slowly to approximately 2 inches below the top of filler neck "C". Due to expansion, when the system becomes hot, any excess water will be discharged through overflow pipe "E".

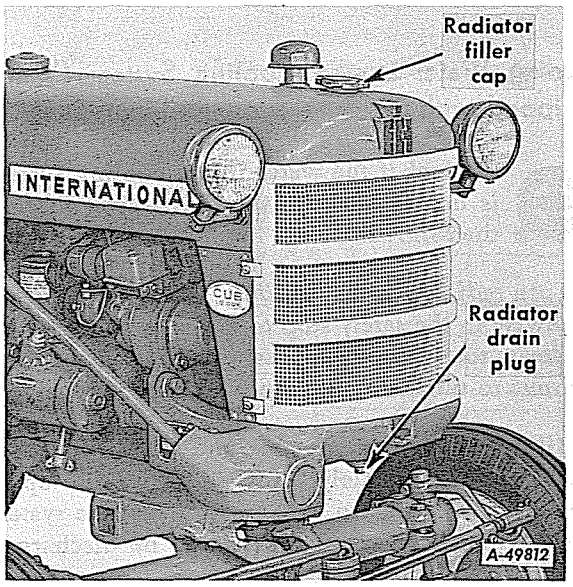
Note: Do not pour cold water into the radiator if the engine is very hot, unless conditions make it absolutely necessary; in which case start the engine, let it idle, and slowly pour water into the radiator.



"A" Radiator cap.
"B" Filler cap gasket.
"C" Filler neck.
"D" Upper water tank.
"E" Overflow pipe.

Illust. 33

Water level in pressure-cooled radiator.



Illust. 34
Water cooling system.

Be sure the radiator drain (*Illust. 34*) is closed; then fill the radiator to a level slightly below the bottom of the filler neck, when equipped with a nonpressure-type radiator cap; or to a level approximately 2 inches below the top of the filler neck, when equipped with a pressure-type radiator cap. Filling the radiator to this level will allow for expansion of the coolant under normal operating conditions. Use clean water; soft or rain water is recommended, as it does not contain alkali, which forms scale and eventually clogs passages.

Before replacing the filler cap, be sure to remove any chaff or dirt particles which may be on the gasket surface or cap, and tighten the cap clockwise to the stop.

Note: A pressure-cooled system will not operate properly unless the cooling system is tight.

The gasket surface must be in good condition. The cap must be properly tightened to the stop, and the system must not have loose connections or leaks. Unless these instructions are followed, pressure will not be maintained, and loss of water and consequent overheating will result. When draining the radiator, always remove the filler cap to permit complete drainage.

Do not attempt to repair or replace any of the regulating valve parts. If the valve is faulty, replace it with a new radiator cap of the same type.

If the engine is to be operated in freezing temperatures, refer to "Cold Weather Precautions."

COLD WEATHER PRECAUTIONS

When operating the tractor in temperatures of +32° F. or lower, observe the following precautions:

Fuel System

Use only a high-test, winter-grade gasoline, and keep your supply in a closed container so the more volatile portion does not evaporate.

Fill the fuel tank at the end of the day's run to prevent moisture from collecting in the tank.

Lubrication

Be sure to use lubricant of the correct viscosity in the engine crankcase, air cleaner, magneto impulse coupling, rear axle housings, transmission, steering gear case and belt pulley housing as specified in the Lubrication Table.

Magneto Impulse Coupling (Tractors with Magneto)

For satisfactory starting, it is important to keep the magneto impulse coupling oiled liberally as specified in the tractor Preventive Maintenance Manual. The impulse coupling should be kept free of dirt and gummy rust formation.

When the engine is hand-cranked, the impulse coupling should trip (click) twice for each revolution of the engine. Failure to do so may indicate the need for cleaning. Refer to the tractor Preventive Maintenance Manual for further information.

Cooling System

When the temperature is likely to be +32° F. or lower, there is danger of the water freezing in the cooling system. To prevent this, either drain the water from the cooling system at the end of each run, or use one of the recommended antifreeze solutions.

Draining and Refilling the System

If an antifreeze is not to be used:

1. Remove the radiator drain plug on the bottom (center) of the radiator. *See Illust. 34.*

2. See that the drain is not plugged and that the water drains completely. Replace the radiator drain plug securely.

Important! Before filling the radiator in freezing weather, have sufficient water available at the tractor to fill the cooling system (warm water is preferable). Cover the front of the radiator and start the engine; then put the water in **immediately**. This prevents the water from freezing during the warm-up period. When the engine has warmed up, uncover the upper portion of the radiator enough to prevent boiling.

If an antifreeze is to be used:

1. Drain the cooling system as described above. Clean it as described in the tractor Preventive Maintenance Manual.

2. Inspect the hose connections. They must be in good condition both inside and out. Then tighten all water connections.

3. Inspect the fan belt and adjust it, if necessary, to the proper tension as described in the tractor Preventive Maintenance Manual. If the belt is worn, or oil-soaked, install a new one.

4. Check to be sure that the radiator drain is tightly closed. Then fill the cooling system, **using either of the following procedures:**

a. Make a solution of the required amount of antifreeze with the necessary amount of clean water (use soft or rain water if possible) to fill the cooling system. Fill the cooling system to a level slightly below the bottom of the radiator filler neck, when equipped with a nonpressure-type radiator cap; or to a level approximately 2 inches below the top of the filler neck, when equipped with a pressure-type radiator cap.

b. Put the required amount of antifreeze into the cooling system. Fill the cooling system with clean water (use soft or rain water if possible) to a level slightly below the bottom of the filler neck, when equipped with a nonpressure-type radiator cap; or to a level approximately 2 inches below the top of the filler neck, when equipped with a pressure-type radiator cap. Start the engine and run it until operating temperature is reached, to allow the antifreeze and water to mix thoroughly.

5. Check the cooling system for leaks, paying special attention to the hose connections.

Antifreeze Solutions

The following table shows the amount of antifreeze to use for various temperatures.

Freezing Point (Fahrenheit)	Pints of antifreeze required		
	Ethylene Glycol	Distilled Glycerine	Denatured Alcohol
+10°	5	6½	6
0°	6½	8	7½
-10°	8	9½	8½
-20°	9	10½	10
-30°	10	11½	11½
-40°	10½	—	13
-50°	11½	—	14
-60°	12	—	15½
-70°	13	—	—

Note: Use only one type of antifreeze. Do not use a mixture of solutions, as it will be difficult to determine how much protection you have against freezing.

Never use any of the following in the cooling water as an antifreeze:

> Honey, salt, kerosene, diesel fuel, glucose, sugar, calcium chloride or any alkaline solution.

The use of alcohol as an antifreeze is not recommended because denatured alcohol boils at +173° F. However, if it is necessary to use alcohol, check the solution frequently to see that you have adequate protection against freezing.

GENERAL ENGINE LUBRICATION

The life of any tractor depends upon the care it is given. Proper lubrication is a very important part of that care.

The engine has a pressure-feed lubrication system. A gear-type oil pump circulates the lubricating oil under pressure to the crankshaft bearings, connecting-rod bearings, camshaft bearings, valve mechanism, timing gears, and governor, thereby assuring positive lubrication of all parts.

Oil Pump

The gear-type oil pump in the crankcase has a screen attached to the oil intake which stops large dirt particles from entering the oiling system. Clean this screen whenever the oil pan is removed.

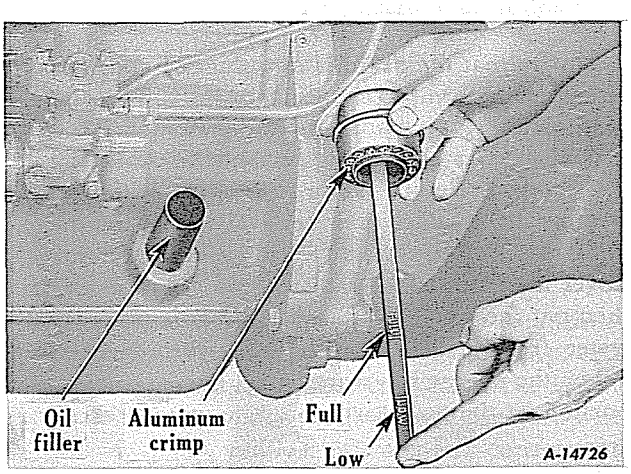
Oil Pressure Gauge

This gauge indicates whether lubricating oil is circulating through the engine. Under all operating conditions, the engine oil pressure should hold the indicator needle past the first mark above 0 when the engine is running at speeds approximately 100 r.p.m. above slow idle speed. *See Illust. 6B.* If the needle does not move past the first mark above 0, stop the engine immediately and investigate the cause of the oil pressure failure. If you are unable to find the cause, be sure to consult your International Harvester dealer before operating the engine.

Always look at the oil pressure gauge immediately after starting the engine.

Crankcase Oil Level

The crankcase oil filler cap has a bayonet-type oil level gauge attached to it. The oil level should never be above the "Full" mark or below the "Low" mark on the gauge. When checking the oil level (*Illust. 36*), the gauge must be withdrawn and wiped clean, then inserted all the way and withdrawn for a true reading.



Illust. 36
Checking the oil level in the crankcase.

Do not run the engine for any length of time with the oil level below the low mark on oil level gauge. *See Illust. 36.*

Never check the oil level while the engine is operating.

LUBRICATING OIL AND GREASE SPECIFICATIONS

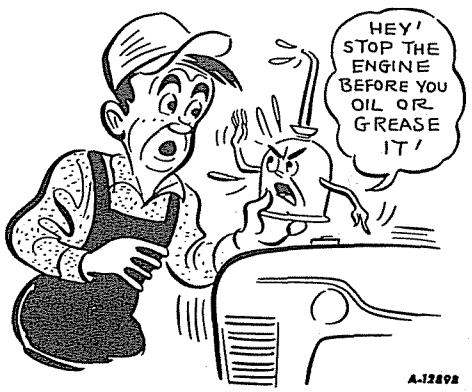
Engine Oil

The three types of crankcase oils marketed have been classified by the American Petroleum Institute (API) as "For Service ML", "For Service MM", and "For Service MS". Either single or multi-viscosity oils designated "For Service MS" are recommended for this engine.

To Aid Starting

To aid starting, the selection of crankcase lubricating oils should be based on the lowest anticipated temperature until the next drain period. It is not necessary to change the oil every time the temperature rises or falls into another temperature range during some part of that time.

Also refer to "Cold Weather Precautions" *on pages 34 and 35.*



Don't oil or grease the tractor while the engine is running.

LUBRICATING OIL AND GREASE SPECIFICATIONS

Gear Lubricant

Tractors are shipped for destinations in the United States, Canada, and Mexico with lubricant in the transmission, steering gear, rear axle, and belt pulley housings. Tractors for export are shipped with all lubricant drained.

Use only high-quality lubricating oils and greases as specified in "Lubrication Table." For your own protection, select only oils and greases of recognized manufacture.

Keep your supply of lubricating oil absolutely clean and free from dust. Always use clean containers. Keep the lubricator clean and wipe dirt from the lubrication fittings before applying the lubricator.

LUBRICATION TABLE

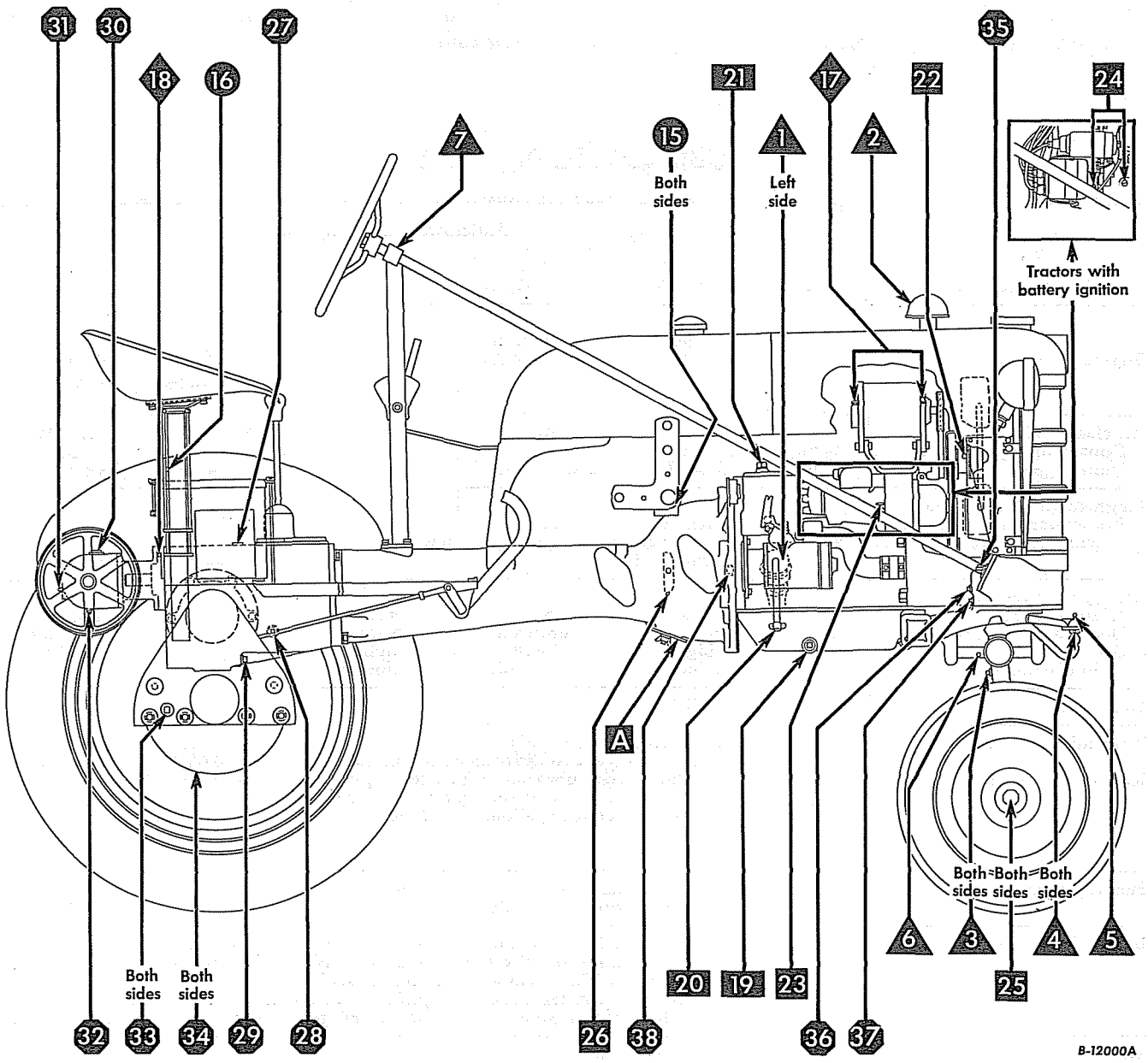
Point of Lubrication	Capacity	Anticipated Air Temperature				
		Above +90° F.	+90° F. to +32° F.	+32° F. to +10° F.	+10° F. to −10° F.	Below −10° F.
Engine crankcase	3 qt.	SAE-30 or SAE 20W-40	SAE-20 or SAE 10W-30*	SAE-10W or SAE 5W-20	SAE 5W-20 or 2¾ qt. SAE-10W w/½ pt. kerosene	2½ qt. SAE-10W w/1 pt. kerosene
Air cleaner oil cup						
Donaldson type	½ pt.	SAE-30 or SAE 20W-40	SAE-20 or SAE 10W-30*	SAE-10W or SAE 5W-20	SAE-10W or SAE 5W-20	SAE-10W or SAE 5W-20
United type	⅜ pt.					
Magneto (if so equipped)						
Rotor bearing	x x x	SAE-30	SAE-30	SAE-20	SAE-10W	SAE-10W
Impulse coupling	x x x	Light oil, i.e., cream separator or sewing machine oil			kerosene	kerosene
Battery ignition unit (if so equipped)						
Distributor and drive housing	x x x	Chassis lubricant	Chassis lubricant	Chassis lubricant	Chassis lubricant	Chassis lubricant
Cam hole felt (in distributor)	x x x	Light engine oil	Light engine oil	Light engine oil	Light engine oil	Light engine oil
Generator	x x x	SAE-20	SAE-20	SAE-20	SAE-20	SAE-20
Transmission	3½ pt.	IH Hy-Tran Fluid; or a mixture in the ratio of one quart IH Torque Amplifier Transmission Lubricant Additive to each four gallons of SAE-10W, 20, or 30 engine oil; or SAE-80 gear lubricant. When temperatures are consistently above +40°F., a mixture in the ratio of one quart IH Torque Amplifier Transmission Lubricant Additive to each four gallons of SAE-50 engine oil; or SAE-90 gear lubricant may be used.				
Rear axle housing						
Farmall Cub	1¾ pt. each					
International Cub Lo-Boy	1½ qt. each					
Steering gear housing	¾ pt.	IH Hy-Tran Fluid; or full strength IH Torque Amplifier Transmission Lubricant Additive; or worm gear lubricant.				
Belt pulley housing	⅓ pt.	IH Hy-Tran Fluid; or a mixture in the ratio of one quart IH Torque Amplifier Transmission Lubricant Additive to each four gallons of SAE-10W engine oil; or SAE-75 gear lubricant. When temperatures are consistently above +40°F., a mixture in the ratio of one quart IH Torque Amplifier Transmission Lubricant Additive to each four gallons of SAE-30 engine oil; or SAE-80 gear lubricant may be used.				
Touch-Control reservoir	4¼ pt.	IH Hy-Tran Fluid.				
Lubrication fittings	x x x	Use chassis lubricant (pressure-gun grease) for fittings on which the hand lubricator is applied.				

*SAE 5W-20 may be used if temperatures are not consistently above +65°F.

LUBRICATION GUIDE

The symbols around the reference numbers indicate the intervals of lubrication.

▲—10 hours, ●—50 hours, ◆—150 hours, ■—250 hours, ■—500 hours, ⬢—periodic



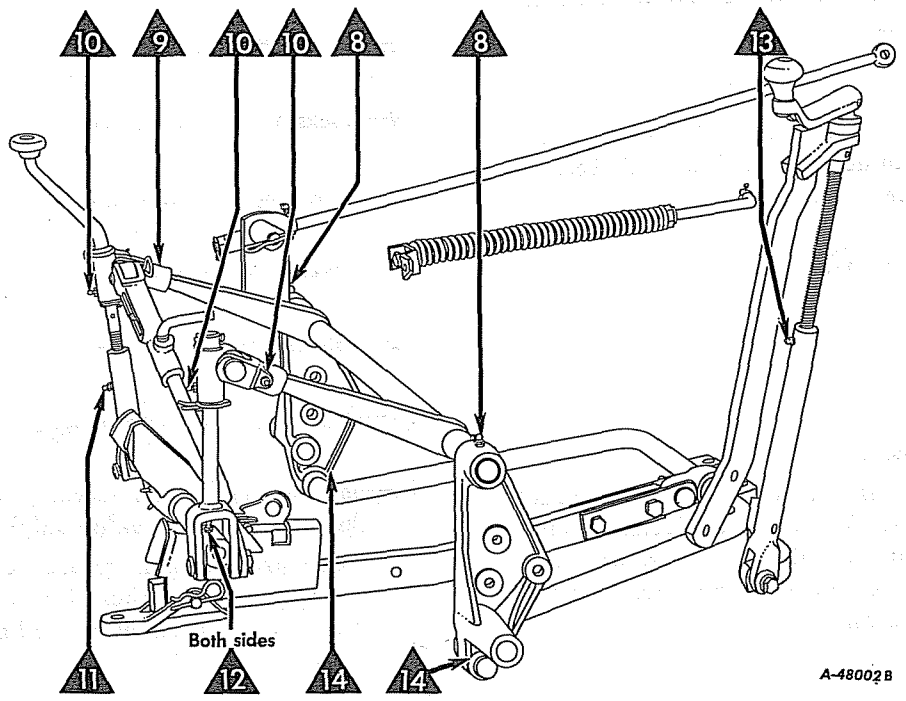
Illust. 38

Side view of tractor.

LUBRICATION GUIDE

The symbols around the reference numbers indicate the intervals of lubrication.

▲—10 hours, ●—50 hours, ◆—150 hours, ■—250 hours, ■—500 hours, ⬢—periodic



Illust. 39
Fast-Hitch.

LUBRICATION GUIDE

▲—Daily or After Every 10 Hours of Operation

1—Crankcase oil level gauge and filler cap.

Check the oil level (with the engine stopped) and add sufficient new oil to bring the level to the "Full" mark on the bayonet gauge. *See Illust. 36.* If the oil level is checked after the engine has been stopped for some time, the oil level may show slightly above the "Full" mark on the gauge. This is a normal condition as the result of oil draining back from the filter.

2—Air cleaner.

Clean out the oil cup and refill the cup to the oil level bead with new oil. *See Illust. 8B.* Refer to Lubrication Table.

3—Steering knuckle post (2).

4—Tie rod (2).

5—Tie rod ball seat.

6—Front axle pivot shaft.

Use pressure-gun grease (chassis lubricant) and apply 2 or 3 strokes of the lubricator or sufficient grease to flush out the old grease and dirt. Lubrication points are the same for both fixed and adjustable front axles.

7—Steering shaft support bracket.

Use an oil can and put a few drops of engine oil in the oil hole.

Fast-Hitch

8—Rockshaft plate bracket (2).

9—Rockshaft arm swivel (2).

10—Lateral link swivel, upper (2).

11—Leveling screw housing (1).

12—Lateral link swivel, lower (2).

13—Depth adjusting screw housing (1).

14—Bail bearing (in bail attaching bracket) (2) (International Cub Lo-Boy only).

Use pressure-gun grease (chassis lubricant) and apply 2 or 3 strokes of the lubricator or sufficient grease to flush out the old grease and dirt.

●—Weekly or After Every 50 Hours of Operation

15—Touch-Control rockshaft arms.

Use pressure-gun grease (chassis lubricant) and apply 2 or 3 strokes of the lubricator or sufficient grease to flush out the old grease and dirt.

16—Seat spring (Farmall Cub)

Use an oil can and put a few drops of engine oil in the oil hole (16) in the seat spring retainer.

Miscellaneous parts.

Lubricate the clutch and brake pedal connections with a few drops of engine oil.

LUBRICATION GUIDE

◆ —After Every 150 Hours of Operation

17—Generator oil cups (2).

Insert the oil can spout through the holes in the hood above each oil cup. Lift the cap on each oil cup and place 8 to 10 drops of oil in each cup.

Caution: Overlubrication will "gum" the commutator, resulting in reduced output and increased wear. Never oil the commutator and do not lubricate the generator while it is in operation.

18—Power take-off shaft.

Use pressure-gun grease (chassis lubricant) and apply two or three strokes of the lubricator.

■ —After Every 250 Hours of Operation

19—Crankcase oil pan.

While the oil is warm, remove the drain plug and drain all of the oil from the crankcase pan. Replace the drain plug. Remove the crankcase filler cap (1). Refill the crankcase pan with new oil up to the "Full" mark on the oil level gauge. Refer to the Lubrication Table for the proper quantity and viscosity to use. Note: For severe service, such as combinations of heavy loads and high temperatures, low temperature stop and start service or extremely dusty conditions, more frequent oil changes may be necessary.

20—Oil filter drain.

21—Oil filter element.

Replace the oil filter element every time the crankcase oil is changed. Remove the pipe cap (20) and allow all the oil to drain out. Remove the oil filter bolt (21) and the filter cover, and remove the used filter element. If the oil appears very dirty or sludgy when draining, flush out the filter case with kerosene. Before flushing, however, replace bolt (21) without the filter cover in order to prevent sludge from being flushed into the crankcase. Replace the drain cap (20) and install the new filter element as instructed in the tractor Preventive Maintenance Manual.

■ —Every Six Months or After Every 500 Hours of Operation

22—Fan hub.

Turn the fan hub so oil retainer screw (22) is to the right horizontal position. Remove the screw and fill the hub with engine oil to the level of the filler hole opening. Now turn the fan hub so the oil filler hole is on the bottom to allow excess oil to drain off. Replace the oil retainer screw. Refer to the tractor Preventive Maintenance Manual for more information.

23—Magneto.

Fill rotor bearing oil cup (23) once with the same oil used in the engine crankcase. Refer to the tractor Preventive Maintenance Manual for more complete information.

24—Distributor (battery ignition unit).

Remove the grease plugs and insert lubrication fittings. Apply pressure-gun grease (chassis lubricant) to the distributor fitting until a small quantity comes out of the relief hole opposite the plug. Apply several strokes of the lubricator to the drive housing fitting.

Remove the distributor cap and distributor rotor, and apply one or two drops of light engine oil to the felt in the hole at the end of the breaker cam. Refer to the tractor Preventive Maintenance Manual for complete information.

25—Front wheels.

Remove, clean and repack the front wheel bearings with fiber grease. Refer to the tractor Preventive Maintenance Manual for more information.

26—Clutch release bearing.

Use pressure-gun grease (chassis lubricant). After every 1,000 hours or at least once every year, apply a few strokes of the lubricator to clutch release bearing fitting (26) or just enough grease until it starts to come out of the bleeder hole on top of the bearing retainer. To reach the fitting, remove the clutch housing handhole cover "A." Refer to the tractor Preventive Maintenance Manual for more complete information.

—Periodic

Transmission

27—Oil filler plug.

28—Oil level plug.

29—Oil drain plug.

Check the oil level periodically. Keep the lubricant up to level plug (28) on the left side of the transmission case. Change the oil in the transmission case at least once a year. However, do not drive the tractor more than 1,000 hours without changing the oil. Remove drain plug (29) and allow all oil to drain out. Replace the drain plug and remove filler plug (27) and level plug (28). Refill with approved lubricant up to the level plug opening and replace the plugs. Refer to the Lubrication Table for the approved lubricant and capacity.

Belt Pulley Housing

30—Filler plug.

31—Level plug.

32—Drain plug.

Check the oil level periodically. Keep the lubricant up to level plug (31). Drain and refill the housing each time the oil is changed in the transmission case. To change the oil, remove drain plug (32) and allow all oil to drain out. Then replace the drain plug. Remove filler plug (30) and level plug (31). Fill up to the oil level plug opening and replace the plugs. Refer to the Lubrication Table for the approved lubricant and capacity.

Rear Axle Housing

33—Oil filler and level plug (2).

34—Oil pan (2).

Check the oil level periodically. Keep the lubricant up to level plug (33) in each rear axle housing. Remove the drawbar to get at the level plug in the left housing on the Farmall Cub. On the International Cub Lo-Boy, the oil filler and level plug is at the rear of each housing. Change the oil at least once a year. However, do not drive the tractor more than 1,000 hours without changing the oil. To drain, remove rear axle housing pan (34). Clean the pan and replace it. Remove plug (33) and fill up to this level with approved lubricant. Replace the plug. Refer to the Lubrication Table for the approved lubricant and capacity.

Steering Gear Housing

35—Filler plug.

36—Level plug.

37—Drain plug.

Check periodically and add sufficient approved lubricant to the level of plug (36). Change the oil at least once every year. However, do not drive the tractor more than 1,000 hours without changing the oil. Drain by removing drain plug (37) and refill with new lubricant. To fill, remove filler plug (35) and level plug (36) and fill with approved lubricant to the level plug opening. Replace the plugs. Refer to the Lubrication Table for the approved lubricant and capacity.

38—Clutch pilot bearing.

Does not require lubrication (oil-less bushing).

Magneto Distributor Gear.

Every year or 2,000 hours repack with IH magneto grease. Refer to the tractor Preventive Maintenance Manual for more complete information.

Miscellaneous Parts

Occasionally put a few drops of engine oil on the engine control linkage, such as the engine speed control rod, governor connections, etc.

EXTRA EQUIPMENT AND ACCESSORIES

The tractor is used for so many different types of work and is called on to operate under so many different conditions that a considerable variety of equipment is necessary to adapt it to the varied requirements of the user.

When you purchased your tractor, you probably had it completely equipped for your particular needs at that time. However, later you may wish to obtain some of the equipment or accessories listed below. These items can be purchased from and installed by your International Harvester dealer.

TYPES OF EQUIPMENT

Arm Rest Pads

Belt Pulley and/or Power Take-Off
Break-away Connector Socket (Tractors with Starting and Lighting)

Combination Rear Light and Tail Light

De Luxe Upholstered Seat
Detachable Seat Pads

Electric Starting
Electric Lighting

Fast-Hitch
Front Axle, Adjustable
Front Wheel Weights

High Altitude Cylinder Head
High Clearance Attachment (Farmall Cub)
Horn

Mounting Step

Power Take-Off and/or Belt Pulley
Pressure Radiator Cap
Pull Bar Extension (Tractors with Fast-Hitch)

Rear Wheel Weights

Safety Light (Tractors with Starting and Lighting)
Swinging Drawbar (Tractors without Fast-Hitch)

Tachometer
Tire Pump for Pneumatic Tires
Tire Pump Kit for Pneumatic Tires
Touch-Control

Valve Rotators

SPECIFICATIONS

Capacities (Approximate—U.S. Measure)

Fuel tank	7½ gal.
Water cooling system	9¾ qt.
Crankcase pan	3 qt.
Transmission case	3½ pt.
Rear axle drive housing (each) Farmall Cub tractor	1¾ pt.
International Cub Lo-Boy tractor	1½ qt.
Steering gear housing	¾ pt.
Air cleaner oil cup (Donaldson)	½ pt.
Air cleaner oil cup (United)	⅜ pt.
Belt pulley housing	⅓ pt.
Touch-Control system	4¼ pt.

Fuse and Headlight or Rear Light

Fuse (cartridge-type)	SFE—20 amp.
Headlight or rear light sealed beam unit	6-8 volt

Transmission (three speeds)

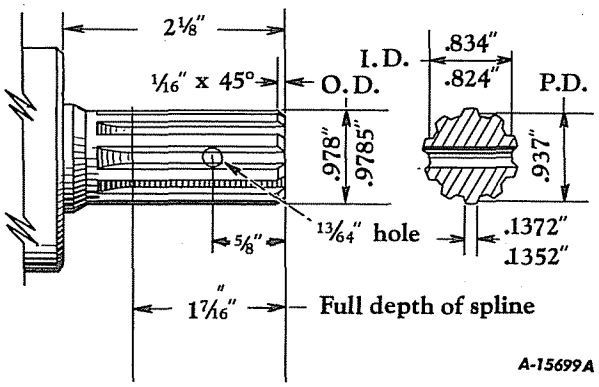
(Speeds based on 8—24 pneumatic tire size.)

Speed: 1st	2.4 mph
2nd	3.2 mph
3rd	7.3 mph
Reverse	2.7 mph

Belt Pulley and Power Take-Off

Pulley speed	
Low idle (no load)	392 rpm
Fast idle (no load)	1,665 rpm
Maximum (full load)	1,487 rpm
Belt speed (6-in. pulley)	2,336 ft. per min.
(7⅝-in. pulley)*	2,968 ft. per min.
(9-in. pulley)	3,504 ft. per min.
Pulley diameter	6 in., 7⅝ in., 9 in.
Pulley face	4¾ in.
Power take-off shaft speed (counterclockwise rotation)	
Low idle (no load)	475 rpm
Fast idle (no load)	2,015 rpm
Maximum (full load)	1,800 rpm

* Regularly supplied with belt pulley.



Illust. 44
Power take-off shaft spline dimensions.

The power take-off shaft connection is a 15/16-inch pitch diameter, ten-tooth involute spline with a 30° pressure angle, machined for outside diameter fit. The dimensions are shown *in Illust. 44.*

SPECIFICATIONS

Engine

Cylinders	4
Bore	2 5/8 in.
Stroke	2 3/4 in.
Engine speed (governed)	
Minimum speed	450-500 rpm
Maximum idle speed (no load)	2,016 rpm
Maximum (full load)	1,800 rpm
Magneto (clockwise rotation)	IH, Type J-4
Spark plug gap	.023 in.
Valve clearance (engine cold)	.013 in.
Carburetor	IH, 3/4-in. updraft
Battery ignition unit (when so equipped) (16° advance distributor)	IH

Clutch

Single-plate, dry-disc, spring-loaded ..... 6 1/2 in.

Foot Brakes

External contracting on drums.

	International Cub Lo-Boy	Farmall Cub
Wheels and Tread		
Front wheels, pneumatic tire size	†4.00—12	†4.00—12
Rear wheels, pneumatic tire size	†8—24	†8—24
Wheelbase	61 7/8 in.	69 1/4 in.
Tread, front (standard—fixed axle with reversible wheels)	43 and 49 in.	40 5/8 and 46 3/8 in.
Tread, front (adjustable front axle, 4-in. intervals)	43 to 55 in.	40 5/8 to 56 5/8 in.
Tread, rear (adjustable—reversible wheels and rims, 4-in. intervals)	40 to 56 in.	40 to 56 in.
General		
Length, over-all	92 in.	99 3/8 in.
Width, over-all—minimum treads	48 1/4 in.	48 1/4 in.
Width, over-all—maximum treads	64 1/4 in.	64 1/4 in.
Height, over-all (to top of steering wheel)	56 1/4 in.	62 3/4 in.
Ground clearance for crops: Under front axle	14 in.	20 3/8 in.
Under rear axle	14 in.	20 3/4 in.
Quick-attachable drawbar (adjustable):		
Normal height	12 3/4 in.	14 3/8 in.
High and low positions	11 and 14 1/2 in.	12 3/8 and 16 in.
Lateral adjustment	11 3/8 in. on each side of center hole	11 3/8 in. on each side of center hole
Fast-Hitch drawbar: Height above ground	4 to 24 in.	7 to 22 in.
Lateral movement	9 1/2 in.	9 1/2 in.
Swinging drawbar: Height above ground	11 1/4, 13 7/8, 16 1/4 in.	13, 16, 18 1/2 in.
Lateral swing	28 in.	28 in.
Minimum turning radius with minimum treads:		
With brake applied	8 ft.	8 1/4 ft.
Without brake applied	.....	9 1/4 ft.

† Other pneumatic tire sizes are available

Specifications are subject to change without notice.

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YOU CAN think away MOST ACCIDENTS

Most farm accidents needn't happen. Case histories indicate that thoughtlessness plays a part in nearly all accidents. Too many folks act on the spur of the moment without taking time to anticipate possible results of their hasty action. The man who oils or adjusts a farm implement while it is running, for instance, is so intent on saving a few minutes that he doesn't think of the possibility of injury until it overtakes him.

Farm equipment designers and engineers insist on safety as well as good performance in the machines they create. Their careful planning, however, can be wiped out by one careless act of an operator. In the last analysis, any power-driven equipment can be only as safe as the man who operates it.

Someone has said, "the best kind of a safety device is a careful operator." We hope you will take this definition to heart. Remember, a little forethought can forestall most accidents.

As a member of the National Safety Council, we are privileged to use the Green Cross for Safety to designate not only our interest in Safety, but to point out more clearly the safety precautions in this manual.

NATIONAL SAFETY COUNCIL

Always Use IH Parts

The finest engineering skill and the most advanced manufacturing methods go into all International Harvester products. Each part is built to our own high manufacturing standards. These are important things to remember when wear and tear make new parts necessary.

IH parts retain and continue the original performance you get when you choose International Harvester quality products. When replacing parts, don't handicap your equipment. For your protection, be sure to use IH SERVICE PARTS.

International Harvester dealers' bins are well stocked with IH parts and their well-equipped service departments are staffed by trained servicemen. Dealers are backed in every case by the full facilities of a nearby International Harvester District Office and Parts Depot.

When selecting new farm operating equipment, keep in mind the protective service facilities provided by the International Harvester dealer in your community.

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